

PACIFIC PULP *and* PAPER INDUSTRY

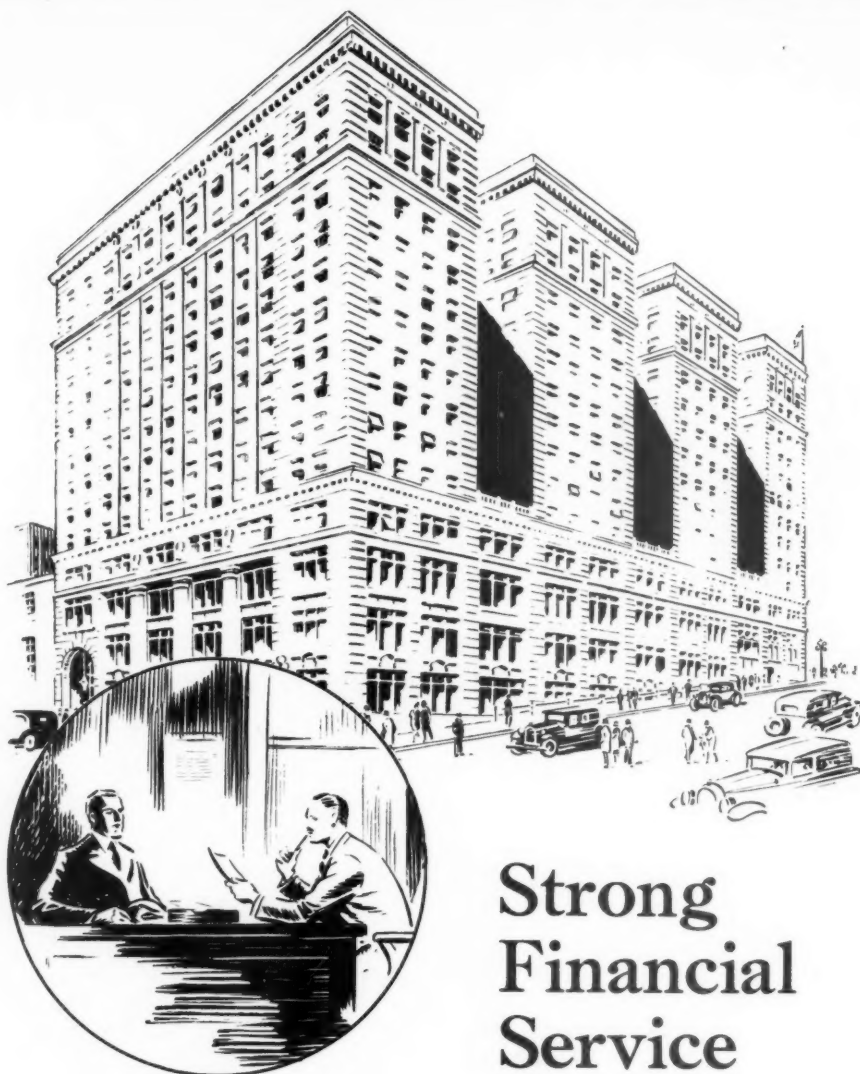
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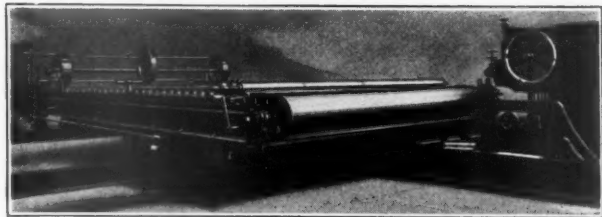
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Pacific Pulp and Paper Industry

Devoted to the Paper Manufacturing Industries of the Western States, Alaska and British Columbia

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Vol. I

MARCH, 1927

Number 2

Experimental Laboratory Planned For Northwest

RECOGNIZING the westward trend of the pulp and paper industry, and having evidence of the need of scientific research and investigation into the problems of this field of manufacturing, definite plans are being made at the University of Washington, Seattle, for the equipping of an experimental laboratory to be devoted to research along these lines. In addition to providing facilities for research in improved methods, new processes and pulp testing, it is the object of this project to create a center for the training of men in the basic principles of pulp and paper making. The plans have been under consideration for some time, and while they are now practically complete they are still subject to the approval of the Board of Regents of the University of Washington.

Two types of work will be carried on; research in both old and new processes, and the chemical examination and analysis of various kinds of pulp and paper. All research will be made in the Forest Products Laboratory in the College of Forestry, under the direction of Hugo Winkenwerder, Dean of the College of Forestry, and Bror Grondal, Associate Professor of Forestry. All phases of chemical engineering connected with the industry, and problems of the technical control of processes in pulp manufacture, will be carried on in the Department of Chemistry, under the direction of Dr. H. K. Benson, professor of Chemistry, and W. L. Beuschlein, Assistant Professor of Chemistry. This division will place the different types of work in the proper departments, and while final arrangements in this respect have not been made, it is understood that this will no doubt be the plan under which the two departments will ultimately operate.

The decision to institute this laboratory work was reached after many requests from the industry had reached the University for the analysis and solution

of certain problems. Manufacturers in the West have found that questions present themselves which are not encountered in other sections of the country, and which are not be solved by any previous methods of attack. The establishment of this laboratory is a logical development demanded by the special needs of this field. Furthermore, with a number of the graduates going into the pulp and paper industry, it was deemed advisable to provide courses of instruction which would fit them more fully for this work.

In the College of Forestry, the Forest Products Laboratory, thru the courtesy of the Everett Pulp and Paper Company, has been provided with experimental apparatus in the form of a soda digester of 250 pound capacity, and a hollander of equivalent size. In the past year, the chief research made has been along lines of wood identification, the causes of accidental discoloration of pulp, the reason for the appearance of unanticipated shives in certain lots of sulphite pulp, and other similar problems. An appropriation of \$60,000 is being sought, and has already been passed by the senate of the state legislature to provide considerable additional equipment which will be necessary for the carrying on of research on a comprehensive scale.

The Department of Chemistry already has a good deal of equipment which is of vital importance in technical work on the chemical nature of pulp and the control of the various processes. According to Dr. H. K. Benson, present plans include the installation of pulp testing apparatus such as is in use at the U. S. Forest Products Laboratory at Madison, Wisconsin. This equipment would include an experimental beater, sheet moulds, hydraulic press, hot plate, drying oven, strength tester and size tester. These machines would permit such work as testing the beating time factor, strength of the various types of pulp, amount of size necessary for certain kinds of paper and determining

the rate at which pulp develops strength under certain beating conditions.

It is hoped to have this equipment installed before September, 1927. Beginning at this time, all chemical engineering students will be required to take a special course in pulp testing before graduation. A second course will be offered as an elective open to foresters, science students and engineers. A third course will consist of original investigations into special problems of the pulp industry, which will be carried on by chemical engineering students and those in industrial chemistry. Research other than that of a chemical nature will, as stated, be done under the direction of the Forest Products Laboratory. Some of the problems under consideration are those such as the utilization of waste sulphite liquor, the use of potassium sulphide on wood instead of calcium sulphide, or the use of chlorine.

Experiments will be followed out on samples taken from the pulp mills of the Northwest. In this manner, manufacturers in this territory will receive the benefit of the investigations made. Paper will also be subjected to similar tests and reports submitted.

As soon as the Forest Products Laboratory is fully equipped, additional problems such as the utilization of Douglas fir for sulphite pulp will be taken up. The waste Douglas fir in the Northwest totals an

enormous figure, it is said, but as it is a refractory wood, it is difficult to impregnate with chemicals. According to Mr. Grondal, ordinary cooking leaves shives, and cooking sufficient to eliminate shives causes a loss of pulp and a decided reduction in its strength. Douglas fir presents a problem which, if solved would make a valuable addition to the industry in the Northwest.

The establishment of this laboratory will no doubt ultimately have a far-reaching effect on the industry. The next five years will show a great growth in this field, and as the industry grows, so will the problems to be met increase. Many of these will be peculiar to the territory in which western mill owners operate. Such a laboratory close at hand, fully equipped to take up all matters arising, will prove invaluable to pulp and paper manufacturers.

It is not illogical to believe that in the next few years this laboratory will become one of the scientific centers of the pulp and paper industry.

To those who are taking part in the development of the western field, it is indeed gratifying to know that their efforts are attracting the attention of scientists, who have the foresight to believe in the future of this branch of manufacturing, and who are convinced that the establishment of a special laboratory to serve this industry is a necessary part of advanced educational institutions.

PERSONALS

Hosfeldt Buys in Packer-Scott Company

Arthur D. Hosfeldt, of Portland, Oregon, has acquired an interest in the Packer-Scott Paper Company which has been owned by C. M. Packer and Vernon C. Scott. Mr. Hosfeldt was connected with the Blake-McFall Paper Company for 17 years, resigning as sales manager only recently.

B. F. Hintzelman Returns to Alaska

B. F. Hintzelman, assistant district forester of the U. S. Forest Service, returned to Juneau February 23, after a four months trip in the States. He covered the entire Pacific Coast while here, and went East as far as Washington, D. C.

Roger H. Franklin Joins Wright Engineering Organization

Roger H. Franklin, industrial engineer, whose training and experience has been mainly in the pulp and paper industry, has become identified with the Percy E. Wright Engineering Company, and will assume the duties of engineer in charge, effective March 1st.

Commenting on the above appointment Percy E. Wright, president and consulting engineer of the organization, explained that new projects on which they are now working have made it necessary to take on a man of Mr. Franklin's qualifications.

The Wright Engineering Company was organized in 1913, and in the early history of the organization particular attention was given to mining and milling plants. The business has, however, developed to where other industries are now receiving attention and Mr. Wright's own time is being devoted mainly to his consulting practice.

Association Executive to Visit Coast

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, is expected to tour the Pacific Coast for several weeks or a month during March or April, it is reported. Dr. Baker is vitally interested in the great development taking place in the West, as are all members of the association he represents. That the American Paper and Pulp Association is alive to the situation in the Western industry is evidenced by the report that plans are being made for the establishment of permanent association offices in some Coast city.

A. B. Galloway Ill

A. B. Galloway, Pacific Coast sales manager of the Oregon Pulp and Paper Company of Salem, Oregon, was taken suddenly ill in Seattle the latter part of February. He was in the Swedish hospital here for about a week, but fully recovered and left just before March 1 for his home.

K. O. Fosse Inspects Shelton Plant

K. O. Fosse, vice-president of the Rainier Pulp and Paper Company, spent several days during February in Shelton conferring with those in charge of construction.

Powell River Executive Tours East

S. D. Brooks, executive vice-president of the Powell River Co., Ltd., visited in Eastern Canada and the United States during February. Business took him to Minneapolis and Chicago.

Parchment Company Representative in Northwest

W. J. Gray, Pacific Coast representative of the Pater-son Parchment Paper Company of New Jersey, arrived in Seattle from San Francisco about February 25, spending some time in the Northwest.

American Paper and Pulp Association Convention Sounds Progressive Note

By DR. HUGH P. BAKER

Executive Secretary, American Paper and Pulp Association

THE Fiftieth Annual Convention of the American Paper and Pulp Association held in New York City February 21 to 25, at the Waldorf-Astoria Hotel, was successful in every way, and conclusively indicated the progressive trend of the industry. Meetings were held by all of the Associations affiliated with the American Paper and Pulp Association and by a number of other unaffiliated groups which, however, are maintaining close contact with the work of the parent association.

Among the more important developments of the conference were those of the manufacturers and merchants covering the thousand-sheet count, the development of methods for obtaining uniformity in statistical reports of capacities, production, etc., general recognition of the necessity for concerted action in matters of common interest to the entire paper industry, such as tariff, state and federal legislation, stream purification, etc., the possibilities of sustained pulpwood production as brought out by papers presented by the directors of three Federal Forest Experiment Stations at the Association's Woodlands Section's meeting, reorganization of the manufacturers of moisture-proof and waterproof wrapping paper, and authorization for a general survey of the pulp situation, together with the development of regular reports by the American Paper and Pulp Association covering not only general business conditions, but also the fluctuations among the more important raw materials entering into the manufacture of pulp and paper.

The annual meeting of the Association was very well attended and the recommendations of the Association's executive committee were approved, whereby the industry recognized the necessity for adequate support of the parent organization on a uniform basis of dues based on sales. The officers of the Association were authorized to study this problem and to work out complete proposal for further consideration of the industry.

The fiftieth annual banquet of the Association was attended by almost a record crowd. The ball room of the Waldorf was artistically decorated in gold and green. Norman W. Wilson, president of the Association, was particularly happy in his remarks. Senator McNary of Oregon discussed the necessity for commercial reforestation as a basis for adequate supply of raw material for the wood using industry of the country and Messrs. W. J. Raybold and George W. Sisson, Jr., past presidents of the Association, gave extremely interesting talks on the men who had made the industry and the Association during the past fifty years, and its opportunities and obligations during the next fifty years.

All in all, the convention was a real success. Reduced rate railroad certificates were validated covering transportation from all parts of the United States and Canada. We feel that the Association and the industry may congratulate itself on the success of this fiftieth annual convention and that it will serve as an inspiration for even more persistent efforts by the staff of the Association to give the industry the right kind of service and to develop information, research and co-operation such as will result in the protection, promotion and perpetuation of the great paper industry of the United States.

Affiliated associations represented at the convention included the Technical Association; the Coast Association of the Paper Industry; the Tissue Paper Manufacturers Association; the Converting Paper Mills Association; the Salesmen's Association of the Paper Industry; the American Waxed Paper Association; the Waterproof Wrapping Paper Manufacturers; the Cardboard Manufacturers Association; the Wrapping Paper Manufacturers Service Bureau; the Bristol Board Manufacturers; the Glazed and Fancy Paper Manufacturers Association; the Paper Makers Advertising Club; the National Association of Gummed Tape Manufacturers; the Southern Kraft Manufacturers Association; and the Binder Board Manufacturers Association.

West Well Represented at Convention

Among those attending the convention of the American Paper and Pulp Association in New York were ten men as the delegation from the western industry. Although forming but a small percentage of those present, this group made up a very fine representation from the industry on the Pacific Coast.

Those who represented the West at the gathering were J. Louis Murray of the Mutual Paper Corporation, Seattle, Washington; O. W. Mielke of Blake, Moffitt and Towne, Portland, Oregon; B. T. McBain, pulp and paper specialist of Portland; H. L. Zellerbach, M. R. Higgins and L. A. Colton of the Zellerbach Paper Company; Mr. E. W. Buckley of the Western Pacific Paper Company, Los Angeles, California;

E. P. Eddy and J. A. Frost of the National Paper Products Company, San Francisco; and C. C. Garland of Tacoma, Washington.

These men left the Coast about the Middle of February, returning shortly after March 1. J. Louis Murray and L. A. Colton arrived in Seattle March 7, after a very pleasant trip from the East. Mr. Murray states that the convention was entirely successful for him and that he feels that the time was indeed well spent.

The location of the western industry distant from the convention centers, necessarily militates against a full attendance of the pulp and paper men on the Coast. However, the great interest of the men in this section in the national industry as a whole, is evidenced by the representation which was present from the western states.

San Juan Pulp Mill Utilizing Mill Waste

Northwest Plant Making Fine Shredded Pulp—Has Novel Features in Design

ONE of the newest and most representative of Pacific Coast pulp mills is the San Juan Pulp Manufacturing Company of Bellingham, Washington. This plant was opened about the middle of October, 1926, and has been operating continuously since that time. Ossian Anderson, O. M. Green, P. F. Knight and William Morrison are the directors of the company, and are the men who conceived the idea of the mill at this location, and brought it to successful completion.

The mill itself stands out among the various industrial enterprises located on the filled-in land below the business section of the city. The acid towers, the hoppers and the digester building stand out prominently from almost any part of the town. It has the superior air of one of Bellingham's finest plants, and rightly so, for citizens of the community regard it as one of the most important additions to the business life of the city in recent years.

Utilizes Waste Only

The plant is located near the Morrison and the Bloedel-Donovan Lumber mills, from which the raw material is received. The pulp is made entirely from waste hemlock and spruce box end material, thus being a very important economic factor in supporting conservation policies. The pulpwood is delivered to the mill by truck from the two mills, and by freight car from the Blaine factory of the Morrison Mill Company. The haul in the former case is short, and the item of transportation cost is comparatively small. From the standpoint of raw material and its accessibility, the San Juan Pulp Manufacturing Company has everything in its favor.

The boiler house is set well away from the main plant, thus reducing fire hazard to a minimum. Fuel for the boiler is obtained from the Bloedel-Donovan mill through a 2,300-foot pipe line which carries waste sawdust and shavings from the sawmill and planing mills. The boiler is of 550 horsepower, Sterling type, furnished by the Puget Sound Machinery Depot. The

building itself is of corrugated galvanized iron sheeting, and is surmounted by a 170-foot steel stack. Fuel is supplied from a large hopper at one end of the building. This hopper is fed by the pipe line for sawdust and shavings, and also by a conveyor which carries fuel brought in by truck or freight car.

When the pulpwood is brought to the plant, it is dumped into a large trough and is delivered to a conveyor built by the Sumner Iron Works, which carries it to the top of a huge bunker holding 600 cords. It is then fed by gravity into the wood room at the other end of the bunker, where it is chipped. Black knots, bark and poor pulp wood is sorted out and is sold to residents of Bellingham for fuel. Thus every piece of wood, no matter how small, is utilized and put to some economic use. In handling the waste in the wood room, a large part of which is composed of small pieces, a labor problem is presented, but it has been found that in spite of this seeming disadvantage, it is after all of benefit, since the pulpwood can be better graded. No segregation of hemlock and spruce is made, the chips being mixed as they come.

A long belt is used to convey the chips from the wood room to the chip storage bin which holds about nine cooks. From here the chips are blown through a 22-inch pipe to the top of the digester building to a bin holding about four cooks, an average day's run. The chips are fed into the digesters by gravity, as in most plants.

Novel Acid Towers

A Jenssen Acid Tower system made by the G. D. Jenssen Company of New York, is in use at this plant, and has proved highly satisfactory. The towers themselves are of novel construction, and are a new but very satisfactory departure from the usual cement tower. They are made of wood staves and are lined with wood blocks, and are built to withstand long and hard usage. Ralph S. Turner, wood stave and pipe manufacturer of Bellingham, constructed these tanks, as well as those in use at the plant of the Fidalgo Pulp Manufacturing Company at Anacortes, Washington.



The San Juan Pulp Manufacturing Company at Bellingham, Washington

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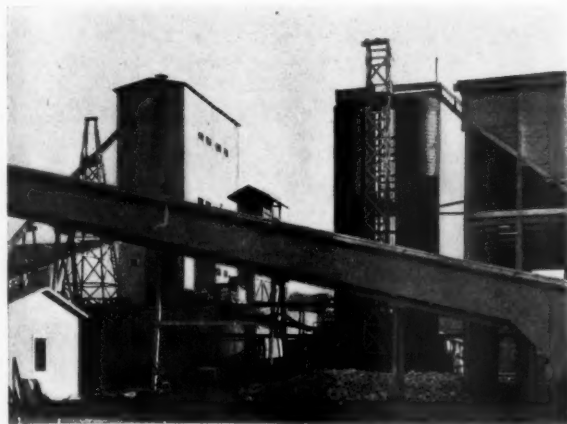
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The sulphur storage room is located near the acid towers, and holds about 600 tons of sulphur. Shipments are received from the Gulf States in cargo lots of 300 to 500 tons. The sulphur is burned in a Glens Falls burner.

Two 14-ton digesters furnished by the Puget Sound Machinery Depot are in use here. Steam is introduced into the cook directly. Behind the digesters are two large blow-pit tanks of 28 tons capacity each. These



The Acid Towers, Chip Conveyor, Blow-Pits and Digester Building

tanks, as well as the acid towers, were constructed by Ralph S. Turner of Bellingham. After the usual washing, the pulp stock is passed through agitator tanks before screening.

Thunes screens, a new Norwegian make, are used in both units of the mill. This is a round, centrifugal type screen, operated by 90 horsepower. The drive is electric throughout the plant, motors being supplied by Fairbanks-Morse, Allis-Chalmers and General Electric. Following screening, the stock is run out on two Rogers double press wet machines. The coarse screened-out stock is saved by running it through a Sandy-Hill single press wet machine. This sheet is lapped and tied in 100-pound bales, and is sold for use in making wrapping paper, tissues, etc.

Stock Shredded Before Drying

A notable feature of this plant is the drying system used. The sheet of stock goes directly from the wet machine into a shredder which is installed at one end of the dryer. This shredding machine shreds the sheet by means of teeth on a revolving drum passing through a stationary comb. The shredded stock then passes through the dryer of usual design, and is carried by a conveyor from a trough at the end to a bin above the baling machine. The same system is used at the

Columbia River Paper Mills, Vancouver, Washington, and at the Fidalgo Pulp Manufacturing Company of Anacortes, Washington. It is known as the Fidalgo drying system.

It is said that stock shredded before drying is much easier on the beaters when it comes to manufacturing it into paper. Furthermore, it takes a little less time and heat to dry the stock after it has been shredded. It is not as easy to bale, but the problem has been solved by the installation of a special baler. Another baler, built by the Sumner Iron Works of Everett, Washington, is soon to be installed. The stock is pressed in bales about 17 by 20 by 34 inches, each one weighing approximately 175 pounds. Toledo scales are used in conjunction with the baling machines.

Proper fire protection has been provided for the entire plant. The building housing the separate processes are segregated so that a fire in one section would not so greatly endanger the other units. A complete sprinkling system covers the machine room, the screen room and the digester building. Hydrants are located at all strategic points in and around the plant.

There is no need for storage space in the San Juan mill, as most of the pulp is loaded directly into freight



The Fidalgo Drying System, with the Shredded Pulp Dropping Into the Conveyor to the Baler

cars and shipped to a ready market. Most of the product is shipped to middlewest paper mills. Some of it is disposed of on the Pacific Coast, and with the opening of the Pacific Coast Paper Mills in Bellingham, the scope of its western market will be considerably increased.

The mill represents an investment of approximately \$500,000. Its present capacity is 40 to 45 tons a day, and although it has been operating less than six months, it is said that plans are being made to increase its daily output to 80 tons.

Prince George Plant To Be Constructed

With only minor details in the way of timber royalties and stumpage to be arranged with the government, it is expected that representatives of the Fraser Timber Syndicate who have been conducting negotiations with the government, will soon be in a position to announce full plans concerning the project being considered. According to reports from Victoria, B. C., tenders will soon be called for the first units of the \$30,000,000 pulp and paper mill to be erected on the old Prince George townsite.

This project has been under consideration for four or five years, and a great deal of investigation has been made. The first unit will probably have a capacity of 100 tons per day, and plans are being made for immediate expansion when the first unit is in operation. Power would no doubt be obtained from a site in the Nechako River, near Prince George. The people directly interested in the proposed mill are said to be W. C. Edwards, Angus McLean and the Royal Securities Corporation, of Montreal.

Crown-Willamette Plans to Develop Vancouver Island Project

Total Investment of \$50,000,000 to Be Made on Campbell River—First 200-Ton Unit of 1000-Ton Mill to Be In Operation Within Five Years

DEVELOPMENT of the great water power resources of the Campbell River on Vancouver Island, British Columbia, and the building of a paper mill, with the probable expenditure of approximately \$15,000,000 within the next five years, was definitely indicated when it was announced on January 26 that Hon. T. D. Pattullo, Minister of Lands for British Columbia, had completed negotiations with J. H. Lawson of Vancouver, who represented the Crown Willamette paper interests of San Francisco.

The work will be undertaken by the Canadian Crown Willamette Co., Ltd., a \$5,000,000 British Columbia company incorporated as a subsidiary of the larger San Francisco company. The Crown Willamette interests are already operating several mills on the Pacific Coast and are rated as one of the largest paper companies in existence.

The initial unit of the mill will be of 200 tons capacity, it is said. The ultimate development of the project, however, contemplates a mill of 1000 tons daily capacity and a total investment approximating \$50,000,000. It is expected to overshadow the \$30,000,000 plant of the Powell River Co., Ltd., at Powell River, B. C., which is now developing 50,000 horsepower and which recently doubled its capacity and is now turning out 450 tons of paper daily.

The Campbell River power project is one of the largest in all British Columbia. Current estimates place the total available horsepower at 100,000, but according to Ken S. Robinson, of Vancouver, consulting engineer and diamond drill specialist, there is a possible 160,000 horsepower in the maximum development at sixteen dam sites.

The Crown Willamette interests have been studying the possibilities of the Campbell River project for a long time. B. C. Condit, a Crown Willamette engineer, has been in British Columbia making a preliminary investigation. He accompanied Mr. Lawson to Victoria when the negotiations for the water rights were made with Hon. T. D. Pattullo. After the negotiations were completed Mr. Condit conferred with Ken S. Robinson and arranged to have him carry on the investigation data and survey work.

Mr. Robinson will begin on this work at once, but the job is of mammoth proportions, according to his statement, and there will be little in the way of visible results until more than a year has elapsed. The contract with the British Columbia government permits this preliminary work to extend over a period of eighteen months, but actual work must be started before the end of that period. The first unit of the paper mill must be completed and ready to operate within five years.

A Victoria company held the water rights on the Campbell River for some time, but as they were unable to proceed with active work, their rights were cancelled about one year ago by the Minister of Lands.

Actual location of the mill has not yet been definitely decided upon, but it has been stated that Menzies Bay, or Duncan Bay, both of which are within a few miles of the mouth of the Campbell River, are the most probable locations. This will mean, of course, the development of a town of from 4,000 to 10,000 people, a virtual creation of a city in the wilderness, similar to the development of the towns springing up in the wake of the mills now operating at Ocean Falls, B. C., and at Powell River.

Campbell River drains Buttles Lake and the two Campbell lakes. Buttles Lake, in the heart of Strathcona Park, may be raised fifty or sixty feet for power purposes, according to one report. Hon. T. D. Pattullo has stated that amendments to the Strathcona Park act would be asked in the legislature to permit the raising of the lake. In this event a compromise would probably be effected with the paper company by which the company would be required to purchase from the government or private owners the timber submerged by the raised lake water.

The lake development will probably not be made at the start, however. The major development will no doubt be made at Campbell River Falls.

Logging operators of British Columbia, in voicing their opinion on the Campbell River development, believe that the mill will help the market for their logs by providing another outlet for the lower priced spruce and hemlock logs now put into the water with the higher priced timber.

To what extent the new mill will depend on its own holdings for pulp logs is not known definitely, but it has been intimated that they will seek their supply from independent loggers. This will throw open all that territory which is accessible to the mill either by rail or by water, making possible an extensive development of the island from the logging standpoint.

One credited statement declares that the company will not exploit the timber of the Campbell River, which stretches up into Strathcona Park, but will depend upon boom logs towed in through the sheltered waters along the coast of the island.

The Campbell River project is the second large pulp and paper plant for British Columbia for which Hon. T. D. Pattullo has completed negotiations and announced within the past few weeks. The other project is the \$30,000,000 paper plant which is to be installed at Prince George.

The Campbell River plans mark an enormously important step in the development of the resources of Vancouver Island with particular respect to the pulp and paper industry. The recent doubling of the capacity of the Powell River plant to a daily capacity of 450 tons, the reorganization of other large and going mills and the quiet progress of other companies in British Columbia are all forward strides in the total development of the industry on the Pacific Coast.

Why Pulp Is Needed

By B. T. McBAIN

IN 1926 America imported much pulp wood, various kinds of pulps and considerable paper.

I am asked almost daily, "Don't you think we will overdo this pulp game on the Pacific Coast?"

Now I will give you the facts and you can decide for yourself.

In 1926 America consumed over 9 million tons of paper. That means over 9 millions of tons of pulp were used. Nearly 2 millions of tons of paper were imported, leaving only about 7 millions of tons of paper manufactured in America. Of this tonnage made at home we imported over 1,400,000 tons of sulphite and sulphate pulps and over 300,000 tons of mechanical or ground wood pulp, a total of 1,700,000 tons, leaving only 5,300,000 tons of pulp produced and reclaimed in America.

I say produced and reclaimed because many millions of tons of old newspaper and magazines are worked over in the paper mills of the country each year.

Of the 5,300,000 tons produced and reclaimed 1,500,000 cords of imported wood were necessary, making probably over one million tons of paper, leaving only 4,300,000 tons made from home grown wood and from reclaimed stock. This means less than 50 per cent of the paper manufactured in America was made from home grown wood and reclaimed stock. Of this amount no doubt two-thirds would be from old papers, so it is safe to say that probably not over 1,500,000 to 2,000,000 tons of our home product came from home grown wood.

Just think of it, probably not over two-ninths of our consumption came from American grown wood.

Now to go into this matter in another way. America pays for all this wood imported at a very high price.

Paper, nearly 2,000,000 tons.

Pulps, nearly 1,700,000 tons.

	Cords
2,000,000 tons paper (mostly news).....	2,600,000
1,400,000 tons chemical pulp.....	2,800,000
300,000 tons mechanical pulp.....	300,000
1,500,000 cords of wood as wood.....	1,500,000
Total wood imported.....	7,200,000

The cost of this wood to the pulp mills manufacturing the pulp and to the American pulp mills buying and importing the foreign grown wood was at least \$15.00 per cord, or a total of nearly 110 millions of dollars in 1926 expended for pulp woods directly and indirectly to foreign countries.

At the same time in Oregon and Washington alone there were wasted in logging camps and in saw mills not less than 7 to 8 million cords.

Now to figure why pulp is needed and why Western pulp mills making quality pulp from saw mill waste should never lose out.

Chemical pulp—sulphite, sulphate and soda use approximately two cords per ton. The wood in these foreign pulps costs American importers not less than \$30.00 per ton.

At the highest in the next ten years two cords of wood now wasted in Oregon and Washington should

not average over \$5.00 per cord or \$10.00 per ton even when the logging camp waste is reclaimed. The saving is easily \$20.00 per ton.

It costs Canadian mills by rail and Swedish mills by water at least as much as Pacific Coast mills by water to the Atlantic Coast.

It would therefore appear that Pacific Coast mills



B. T. McBAIN
Pulp and Paper Specialist of Portland

should always be able to undersell these foreign mills in an emergency and still make exceptional profits while the foreign brothers are losing money.

But, with proper sales connections there will be no emergencies and no need for underselling. I do not believe in it and there is room for us all—why?

America increases its pulp consumption from 5 per cent to 7 per cent annually. Five per cent means 250 tons daily increase each year, and 250 tons per day means 5 mills of 50 tons capacity must be built each year after we are taking care of ourselves, if that time ever comes to take care of the natural increase each ever comes, to take care of the natural increase each

Powell River Superintendent Visiting California

Cliff Shirley, sulphite superintendent for the Powell River Co., Ltd., has been in poor health for some time. When a change of climate was decided upon, Mr. Shirley was sent to Arizona, where he stayed until just recently. The latest word received at the company's offices at Vancouver, B. C., indicate that he is now in Los Angeles, staying at the Northern Hotel. Mr. Shirley expects to be in the movie capital for some time yet, but has hopes of being able to return to the job at the Powell River plant about May 15.

Fire Hazards, Protection and Coverage In Pulp and Paper Mills

By MARTIN LOEWING

THE proper designing of a modern pulp and paper plant with reference to protection against the inherent fire hazards peculiar to its processes, is an important factor in its efficient and continuous operation.

Owing to the fact that large quantities of water are used in parts of the plant one might be disposed to dismiss this matter as worthy of very little consideration, but the actual facts warrant careful attention to the following possible fire causes.

The storage of large quantities of raw material consisting of many cords of more or less seasoned pulp wood has caused considerable fire loss on more than one occasion. Such fires are usually due to external causes, such as sparks from locomotives, which would suggest the careful selection of a location of wood piles. The installation of a manually controlled system of open sprinklers of perforated pipes has been found of much value in controlling fires of this sort and preventing them from spreading to buildings.

Sulphur Hazard

When the sulphite process is used the storage of raw sulphur presents a considerable hazard. While the material itself is not subject to spontaneous combustion and quite a high temperature is required to ignite it, burning sulphur is difficult to extinguish owing to the injurious fumes generated which make it dangerous to approach with manually operated devices. The storage of this material in a well detached building of non-burnable construction would be advisable.

The hazards ordinarily present in woodworking plants are here reduced to a minimum by the constant flooding with water of this part of the plant, but the chip storage bins, owing to their location above the digester buildings, must not be overlooked. The fact that a great deal of heat is necessarily thrown off by the digesters and the comparative inaccessibility by ordinary fire extinguishing means to contents of chip bins, suggests the great importance of fire resisting construction of the bins themselves.

Detached Buildings

The hazards ordinarily present in steam power plants are of course present in this instance, but these usually can be minimized by locating steam and power generating equipment as well as fuel storage in a detached building of fireproofed construction.

Plants which produce wood pulp only for shipment to paper mills contain the additional hazard of pulp drying in steam heated dryers operated at high temperatures. If of ordinary wooden construction the material of which the dryers consist gradually becomes highly inflammable, so that in planning for this operation, provision should be made for constructing pulp dryers of masonry or other non-burnable material.

The paper making machine itself, containing as it does steam heated drums, gears, bearings, etc. must not be overlooked as a fire hazard, especially at and near the dry end, where, besides these possible fire causes, it is not unusual to find accumulations of torn

paper. The use of kerosene for cleaning the calendar rolls at this end of the machine also entails a fire hazard of considerable proportions.

In mills utilizing waste products such as rags and old paper, the hazard incident to handling and storing of these waste products is ever present and requires most careful watching.

In addition to these, the usual hazards common to most manufactories are, of course, bound to exist, such as hot boxes and bearings, electric motors, conveyors. These can be minimized by proper lubrication, watchfulness on the part of operators, and above all else, cleanliness and good housekeeping.

Next in importance to fire prevention is the matter of fire protection. This, as well as the class of construction of the several units of the plant, has a very important bearing on the cost of fire insurance, a permanent overhead expense.

It will undoubtedly be found advisable in designing new plants to construct all buildings of masonry or concrete, in addition to segregating the more hazardous processes mentioned above, in detached buildings.

Automatic Sprinklers

Provision for automatic sprinkler protection should be made for the entire plant as this is unquestionably the best form of protection ever devised. The large saving in insurance premiums resulting from a complete sprinkler equipment will be found to pay for its cost in a few years and the probability of forced suspension of business due to fire is thereby reduced to a minimum.

This protection should be augmented by a sufficient number of chemical extinguishers distributed throughout the premises and a good system of inside standpipes and outside yard hydrants and hose.

Needless to say, it will be worth while to submit plans for new plants or alterations and extensions to old ones, to the Underwriter's Office for discussion with regard to details of construction and fire protection.

Insurance Types

For complete protection of the business, the following forms of insurance are suggested:

1. Fire.
2. Use and Occupancy, or Business Interruption Insurance to cover the loss of profits and such overhead costs as must continue in order to prevent the disruption of the organization, and to continue dividends to stockholders.
3. Steam Boiler Insurance, to cover property loss resulting from possible boiler explosions, and to secure the excellent inspection service accompanying this insurance. Air tanks or other pressure vessels liable to explosion should be included in this coverage.
4. Elevator Insurance, if any on premises.
5. Public Liability Insurance in sufficiently high limits to cover claims that may be made for personal injury to anybody not an employee, while in or about the premises. This includes all persons who may have occasion to visit either on business or for inspection

(Continued on Page 14)

British Columbia Pulp Mill Has Model Town at Woodfibre, B. C.

NESTLING at the foot of protecting hills, ten miles from the mouth of Howe Sound, the pulp mill town of Woodfibre faces, across four miles of water, the snow-capped mountain "The Lions", with the neighboring towns of Squamish and Britannia Mines.

A community life of health and mutual enjoyment has developed groups of settled citizens. The opening of the new social hall at Woodfibre furnished the last outstanding need for the continued development of social intercourse in the community. Providing a theatre, gymnasium, and a hall for basketball, this new building not only rounds out the opportunities for all-year recreation for those at Woodfibre but offers the opportunity for hospitality to friends in the other Howe Sound towns.

Throughout ten months of the year, the enthusiasm shown for games of baseball and football is a great factor in engendering a fine competition for the securing of trophies in the leagues of the local clubs. Tennis courts are in constant use from early morning until dark, due to the fact that work at the mill is carried on in three shifts of eight hours each. The great interest in the game is shown by the fact that during any afternoon or evening there appears to be a number of onlookers in addition to the players on the courts.

A fine feature of the determination to have enjoyment in life is shown in the success in developing local talent to the point of the formation of an orchestra which would be entitled to applause in city entertainment, and the appreciation of good things is indicated in the community purchase of one of the finest grand pianos on the Pacific Coast.

While the town of Woodfibre is all the property of the British Columbia Pulp & Paper Company, Limited, affairs of interest to those in the town are carried on through friendly cooperation between a committee of employees and the plant management. Every employee at the plant is a member and a voluntary contributor to the funds of the Woodfibre Community Club, and

as a result all entertainment is free, with the exception of the moving picture show.

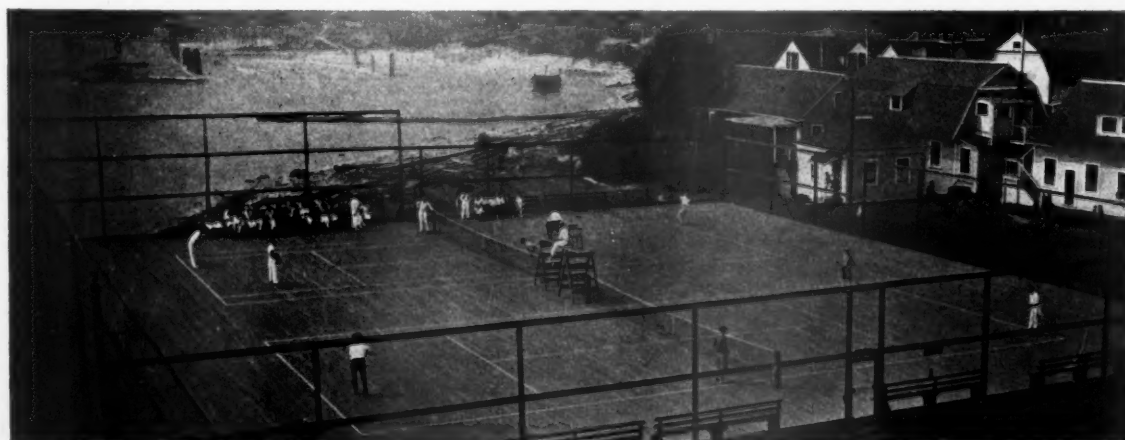
Although the houses at Woodfibre are not new, the brightness of their appearance with fresh white paint would set a good example for many a city district. The fact that the majority of the residents have occupied the same houses for many years and have taken satisfaction in the development of attractive lawns and



LAWRENCE KILLAM
President of the British Columbia Pulp and Paper Company

beautiful gardens has resulted in there being a real group of homes.

The school at Woodfibre is new, well lighted and ventilated. The teachers are above the quality generally available. An efficient resident doctor not only cares for those who need his help but does excellent work in keeping the community healthy. Two streams from



Tennis Courts in the Residential Section of Woodfibre, B. C.

the mountains above supply pure water. A daily steamship service brings the city of Vancouver and its advantages very close.

The result of all the advantages at Woodfibre is that the residents of the town have a well-rounded life which keeps them enthusiastic in their work as well as their play, healthy in mind as well as body, and free

from envy of the lot of others, with a true local pride and appreciation of days well spent.

An economic reflection of the satisfactory conditions is shown in the increase of quantity and improvement of quality of the production of Easy Bleaching and Strong Sulphate pulp at this plant of the British Columbia Pulp & Paper Company, Limited.

Occident Pulp Mill Starts Operations

THE Northwest's newest pulp mill, the Occident mill at Edmonds, Washington, completed the final installations of machinery and began production about March 10. Ground wood pulp is to be the only product, about 40 tons being produced daily.

The Occident Pulp and Paper Mills, Inc. is headed by Joseph E. Molyneux, president, with Rufus H. Bishop as vice president and operating superintendent;



The Occident Pulp and Paper Mills, Inc., at Edmonds, Washington

Stuart M. French, secretary and engineer in charge of construction; Robert S. Wilson, treasurer; and Roy J. Hutson, trustee. The Board of Trustees is made up of all of these men.

The plant is located in a war-time structure 232 by 70 feet, which was originally built to house a sawmill. It had never been used, and while not designed for pulp production, is admirably suited for manufacturing ground wood pulp. The foundations and structure are of heavy timbers. It is the plan of the owners to build new side walls of reinforced concrete some time in the near future.

Water is obtained from a small stream nearby, and is brought into the plant thru an ordinary gravel filter. Even in the dryest seasons, this stream will provide more than enough water for all requirements. The present amount required is about 100,000 gallons per day. When the capacity of the plant is increased 50 to 100 per cent, as no doubt will be done in the near future, this water supply will still be adequate, it is believed.

Raw material for the pulp made here consists partially of logs, partially of mill ends, and of cord wood. Cottonwood, spruce and hemlock will be used for the most part. A regular 84-inch cut-off saw is being installed for the logs, and a 28-inch saw for the cord wood. By the mill there is space for the storage of

over a million feet of logs. Facilities have been provided for landing barges beside this area so that the raw material may be shipped in easily. The railroad tracks adjoin the other side, thus permitting shipping in of raw material by freight car. About 100 or 150 feet off the end of the plant, which is built out over the water, the channel is deep enough to float any ordinary boat. A dock 150 feet long will soon be built to accommodate these vessels.

Power is furnished thru a sub-station which the Puget Sound Power and Light Company is building a few rods from the mill. All machines are electrically driven, there being about 3,000 electrical horsepower in the plant. The four grinders are driven by two 1250 horsepower synchronous motors, and all other machines together require about 500 horsepower. The large motors are placed on a concrete base for which 100 piles were driven, the concrete being reinforced with ten tons of iron. A foundation has been provided for another motor, which will be installed when the first expansion takes place. Foundations are also in for two more grinders.

All machinery has been arranged for the most efficient and economical operation. All drives are either direct connected or silent chain drive. From the grinders, the pulp and water is pumped to the top floor of the building, from where it flows by gravity to the vibrating screen, the rotary screens and the save-all. The wet machines are located on the second floor, away from the wood cutting, barking and grinding operations. In the center of the building, an elevator has been provided to make easier the handling of the finished pulp. There has also been installed a 600-ton hydraulic press, which is chiefly for use on the pulp which is to be shipped to the Orient.

The entire output of the mill was contracted for well in advance, and it is stated that requests for additional shipments are received frequently. Officials of the company consider it very likely that an immediate expansion will take place, to meet the increasing demand for pulp. At present, the output is being shipped to Japan, to New York, and some to the new Pacific Coast Paper Mills at Bellingham, Washington.

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or educational purposes, such as so-called "industrial hikes" by groups of students or others.

6. Electrical Machinery Insurance to cover damage to electric turbines, motors or other appliances against loss occasioned by internal electrical or other causes which is expressly excluded in fire insurance policies. Fly Wheel Explosion Insurance may also be included in this form of coverage.

7. Employers' Liability to cover all employees who may not be included under State Compensation Act.

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Pulp Timber Re-Growth on the Pacific Slope

By C. R. BERRY, Forestry Engineer

IT is not too early to commence the establishment of a program for the reforestation of the pulp timber areas of the Pacific coast as well as of the hinterland from the western slope of the Rockies.

Such a program should be exhaustively considered in all of its various phases and particularly in its relation to the lumber manufacturing interests, its companion industry; since this is a most vital relation, all conclusions should seek not to disturb the economic balance that will, in the West, constantly exist between these two great industries.

While hemlock, spruce and silver fir are the three major species of pulp timber on the Pacific slope, there is a likelihood that, in the near future, spruce may gradually be eliminated as a pulp wood, for two reasons: first, it is, or will be, in the course of time, a valued wood for lumber products; second, Western hemlock has advanced so rapidly as an ideal pulp material that it practically releases Sitka spruce from the necessity of being considered in combination with hemlock in order to raise the standard of quality of the pulp.

Silver Fir Pulp

The Silver fir of the West, found mostly in the foothills and the west slope of the Rockies, is an excellent pulp timber when not affected with black heart. In favorable comparison with Western hemlock, the growth of Silver fir is even more rapid than that of the former or other evergreens, but owing to its natural habitat being in semi-arid regions, its growth is somewhat retarded, and the hemlock being more at home in the moist, humid sections, these two species, each in their native haunts may be said to possess about an equal growth.

From this decade on, Douglas fir and Sitka spruce will be "custom cut". That is to say, the age of reckless harvesting of these two magnificent species is past. They might just as well be ruled out of consideration so far as the pulp and paper industry is concerned.

The pulp industry will do well to consider for the future, mainly, hemlock and Silver fir, although there

are a few other conifers and several of the deciduous varieties suitable that are now and will in the future, be used for pulp material. But, with the possible exceptions of small amounts of cottonwood, poplar, aspen and black pine, for the purposes involved, Western hemlock and Silver fir will be the prime factors of the program of re-growth.

Western Hemlock

Western hemlock fully matures at about 100 to 120 years. Over-matured timber of this species rapidly deteriorates. Its periods of growth are considered to be quite irregular; that is, the rate of growth is greatest from the sapling, to say, the young tree of about one foot in diameter; its growth then is slower the closer it approaches its maximum size. This, perhaps, should be considered an ideal condition for pulp manufacturers, since Western hemlock of approximately 12 inches in diameter makes a high grade pulp, for two or three reasons: it contains but a small percentage of sap stain; the heart wood fiber has not collapsed and the sap wood, the most desirable of all the parts of the tree, is the largest proportion of the tree growth at this stage.

Western hemlock reforests itself in a natural manner and Nature's selective processes determine what seedlings shall survive. In this great effort man and his "scientific" proclivities are best confined to the employment of means by which this new growth may be fully protected from man's own carelessness and the greatest enemy the forest has—fire.

After a stand of matured Western hemlock has been cut and even ordinary care has been exercised in logging it and fire has been kept out of it, the second year it will be carpeted with a seedling growth. Within ten years a thicket of ten, fifteen and even twenty foot saplings will be crowding one another in an effort at getting their crowns in the sunlight. This is truly a "survival of the fittest" in Nature's most elementary form. Man, with his so-called science, would plant seedlings (now almost discontinued in favor of plant-



A Typical Stand of Douglas Fir and Hemlock Timber in the Northwest

ing the seed) that appeared most perfect and sturdy—above the ground. Nature, on the other hand, considers only the root system. This is one reason why scientific reforestation cannot approach Nature's method—with many other reasons which are irrelevant to this subject. The present plan of planting the seed of conifers may be considered in a later article, but for the present, it seems to be far more appropriate and timely to consider natural re-growth of pulp timber species, since the cost of doing it thus is reduced to the lowest possible factor. And the factor is simply that of protection.

As this sapling thicket continues its rapid growth, the lower branches die and eventually fall off, leaving what are termed "pin" knots, which in Western hemlock are generally confined to a small heart wood area. From 40 to 50 years, such a stand is ready for harvesting as pulp wood.

Hemlock Better

Silver fir, being found as stated, in more arid districts, will not so readily reforest itself. With it, generally are found Red fir, Black pine, Yellow pine, White pine, tamarack, larch and sometimes a sprinkling of other unimportant species. While it is a valuable pulp timber, it is unlike Western hemlock in that it is more often mixed with these other varieties of timber that make but indifferent pulp wood, or are entirely unsuited for pulp manufacture. But under not too adverse conditions, Silver fir is a rampant grower and in a natural way, will give a good account of itself in the process of re-growth. It is of a greater economic value when cut before maturity, since when at or near the mature stage of its life it becomes black hearted and much of it must necessarily be wasted.

The legislature of the state of Washington has now before it for enactment or rejection, a state reforestation bill that may go a long way in solution of the problem, if its meaning is not obscured by divers amendments and riders. In a later article, after a thorough analysis of the bill, with particular emphasis on its relation to the pulp and paper industry, a review may be made of it in this publication.

It is quite certain that a national policy of reforestation will be necessary in order to avoid conflicts and economic embarrassments between public and private interests. It cannot be expected that the federal government shall bear all the expense of raising another crop of pulp timber any more than the farmer expects his government to plant his farm crop for him. But the future generations must be safeguarded and it is just as vital that the next crop of pulp material for paper manufacture be now considered as for any of our organic commodities. To date, no real workable policy has been evolved, and it is the bounden duty of the Department of Agriculture to take a more serious part in the effort with its Bureau of Forestry and not leave it to each government to adopt a hodge-podge of laws and methods, with particular interest only to the people within the state's borders, when the people and the interests of the entire nation should be considered.

National legislation, affecting both the saw and pulp timber of the nation in the future, will be an increasingly pregnant subject of discussion in the halls of Congress; it will be the essence of wisdom indeed for this deliberative body of the nation to call in the country's "old timers"—men who have observed and checked upon a generation of timber growth, and let them sit in the councils and voice their opinions upon the things which they have seen with their eyes and had personal contact with for many years.

Washington Legislation Would Affect Pulp Mills

Pulp and paper mills of the state of Washington will no doubt be considerably affected by an amendment to the fishery laws which has been introduced in the State Legislature, and which from all indications will be passed. This will amplify the present law against pollution of waters and would establish the State Fisheries Board and the State Board of Health as judges as to the degree of pollution to be considered illegal.

In part, the law as amended would read: It shall be unlawful to pass into any waters of this state "any sawdust, planer shavings, wood pulp or other waste, lime gas, oil, oil products, grease, cocculus indicus, or any chemical substance in quantities sufficient in the judgment of the State Fisheries Board and the State Board of Health to injuriously affect the fish or shellfish inhabiting such waters. . . ." It shall also be unlawful to pass into any waters "any refuse or waste material, substance or matter . . . which may be determined by the State Fisheries Board to be deleterious to fish or shellfish. The State Board of Health shall co-operate with the State Fisheries Board in the making of its said determination."

Another section which will materially affect pulp and paper manufacturers reads: "Before any industrial or manufacturing concern, the construction and operation of whose plant will necessitate the dumping of refuse or waste materials, substances or matters into any waters of this state, either fresh or salt, shall proceed with construction and operation, it shall submit for the approval of the Director of Fisheries and Game, through the Supervisor of Fisheries and the Director of Health, detailed plans for the disposal of its refuse or waste materials, substances or matters, and if such plans do not in the judgment of the Supervisor of Fisheries and the Director of Health make adequate and effective provision for safe-guarding fish and shellfish in such waters, the said Supervisor of Fisheries and Director of Health shall disapprove same and it shall be unlawful for the person, firm or corporation to proceed with the operation of its said plant until the plans are revised in such manner as to meet the objections of the Supervisor of Fisheries and Director of Health."

Final passage of these amendments was considered by several state officials as only a matter of time, the latter part of February.

Forest Research Council Meets

The Advisory Council of the Pacific Northwest Forest Experiment Station held its annual meeting in Portland on February 9. C. S. Chapman, of the Weyerhaeuser Timber Company, was chairman of the Council. This body was formed a year ago to assist in directing the activities of the research branch of the U. S. Forest Service in the Northwest, and includes representatives from the state forestry departments, private timber interests, and the forestry colleges. At the meeting on February 9 a report was made on the work accomplished during the past year on some fifteen individual research projects covering growth and yield studies, slash disposal methods, forest tree planting technique, natural reproduction principles, and fire prevention and suppression studies. Some of these studies have been completed and the results are being made available. The Council considered the needs of the various interests and outlined the new studies to be taken up during the coming year.

Early Pacific Coast Paper Mills From The Days of '49

IT is generally supposed that the pulp and paper industry on the Pacific Coast is of comparatively recent origin. However, investigation into this matter shows that the industry was being conducted on a noteworthy scale as early as 1859. The first paper mill on the Coast, it is said, was one built by W. P. Taylor at Camp Taylor, California, shortly after the gold rush of '49.

According to Joe Quillan, who was a machine tender in this mill, and who has been with the Everett Pulp and Paper Company for the past 30 years, the raw material used was composed of old burlaps, rags and old papers. The products were chiefly manila paper, fruit wrappers and other products which were sold in their own store in San Francisco.

The machinery was small and crude, and was at first run by water power. All pieces of machinery had been shipped around Cape Horn. They used the old process of cutting up and cooking in open vats or tubs with false bottoms. The steam was turned up into these vats thru vomiting pipes, cooking the stock with the usual liquor of soda and lime.

The stock was next washed and bleached in the beaters, which were set in a circle around a huge driving gear. The beater bars had gears on the end which fitted into the big gear in the center of the circle of beaters, which operated all four machines at once.

After refining the stock, it was made up into paper on a small machine which, in comparison with present day Fourdriniers, was very crude. They had eight or nine small copper dryers in place of the familiar ones in our modern plants. However, considering the type of machinery used, the quality of paper made was very good. Later more modern machinery was obtained, and the plant operated for a number of years. It was afterwards abandoned and a larger mill for making printing paper was built on Paper Mill Creek, which subsequently was a complete failure.

This first mill was operated under the direction of the five Taylor brothers, William, Sam, Ed, James and Fred. The elder Taylor was buried under a large oak tree on the bank of the creek across from the mill, at the spot where he first camped in California. Of the younger Taylors, Sam was later manager of the Oakland Street Railway, William was Sheriff of Marin County, James was head salesman for the Everett Pulp and Paper Company until the time of his death, and the other two were drowned a few years ago off Cape Flattery while on their way to Alaska.

According to Cutler Bonestell of Bonestell and Company, San Francisco, the next mill was built near San Jose, Cal. on Alviso Creek. The mill was originally built by James Lick, who established the Mt. Wilson Observatory; the purpose of the mill being to grind wheat into flour. The soil of the Santa Clara Valley proved so valuable for fruit growing that the growing of grain was abandoned and the mill went out of commission. It was afterwards turned into a paper mill with the idea of making wrapping paper from cactus pulp. Some paper was made of that material but it

was never successful. The mill was later bought by A. D. Remington of Watertown, New York who was afterwards one of the first to make paper from wood pulp. The mill was afterwards destroyed by fire, and although rebuilt was not successful.

Following this, another mill was established near Stockton in California by a group of men composed of Albert Dibble, Egbert Judson and Henry Pierce. The original idea of the mill was to use straw, as the San Joaquin Valley was a great wheat growing district. They intended to use the straw for fuel to produce steam and also to use the straw for a fiber in making print paper. At that time there was a good deal of print paper made out of straw as a fiber. The mill was not successful and finally all the stockholders disposed of their interest to Henry Pierce, who had the courage and the vision to hold on. He brought out from the East a nephew, William Pierce Johnson, who looked after affairs at the mill for his uncle. Shortly after Mr. Johnson's arrival, Henry Pierce realized the value of the water power at Oregon City and the mill was dismantled at Stockton and abandoned; some of the machinery being taken to Oregon City and there was established the first unit in real paper manufacturing on the Pacific Coast—the Willamette Paper Co.

Another early mill was that built at Marshfield, Oregon, by C. A. Smith. According to Vernon Smith of San Francisco, this was one of the first in the United States designed to utilize saw mill waste for the manufacture of sulphate pulp. During the war period, the plant was shut down and the machinery sold. The buildings are still standing, and will probably be used again some day for saw mill waste conversion. As the first plant for sulphate pulp on the coast, this plant will be described at greater length in a subsequent issue.

Thomas C. Fleming, who is now chairman of the County Commissioners of Snohomish County, Washington, was one of the earliest paper men on the Coast. Some of his very interesting experiences in the early industry are related as follows in a letter to this journal:

"I came to the Coast in 1875 employed by Mr. Thomas Nugent as machine tender in the Point Arena Paper Mill. This mill was started some years previous, and had one forty-eight inch cylinder machine. We made straw wrapping exclusively. The only white man employed in the mill was the machine tender, all other employees being Chinamen. We averaged about three tons per day of butcher paper, 20x30-30 lbs. The mill was situated about six miles from Point Arena. The lime and other supplies all had to come by schooner from San Francisco and when the wind was not favorable, the schooner was sometimes delayed ten days to a couple of weeks, during which time we would be shut down.

"I learned the paper making business in Holyoke, Massachusetts. I hired out to come to California to Mr. Nugent at a salary of \$45.00 per month, and

found he also furnished a saddle horse. All employees had to furnish their own blankets also their own mattresses, which were large sacks filled with straw. As the boarding house was run by the owner, and game was very plentiful, we had quail and venison so often that we rebelled against it. The mill ran a few years longer and then quit, and I believe the machinery was bought by the Brown Bros. of Saratoga.

"My next job was with the Lick Paper Mill, located near Santa Clara, California. This was a very fine equipped mill, one forty-eight inch cylinder machine and all latest improvements. This mill was owned by a Mr. King. This fine brick building was formerly a flour mill built by James Lick, one of our old time millionaires of California. The mill was finished all through the inside with mahogany and rose wood, and after Mr. King acquired this, he sold enough of the inside furnishings to pay for the mill. We made manila paper here exclusively, and the material used was gunny sacks, jute and rope. We had four very fine beating engines and good machinery all through. A Mr. George Walker, an Englishman, rented the mill soon after and started to make paper out of Yucca Palm brought from the Mohave Desert. We experimented with this for a long time, but it was not a success. The promoters thought they had struck a bonanza, but after they dropped quite a sum they quit. We made paper out of it but it was not a success, as after it was cooked there was no fibre left. The only way we could use it was by using one-half manilla stock and at that it was hard to get off the roll.

"While this experimenting was going on the promoters always had of Saturday evening a brass band out from San Jose for the amusement of the employees. We had dancing and a general good time about once a month—on Sundays they would give a dinner under the willows by the creek, at which everything imaginable would be on the table. Besides the employees would be the promoters and families from San Francisco and San Jose. We never drank water in this part of the country as there was too much alkali in it. During the year I was there I don't think I drank a glass of water. Wine was very cheap and you could get any brand you wished from 25c to 35c per gallon. Every man on the place from owners down had from three to five demijohns which they would replenish twice per week when the wine peddler came around. It was quite a sight to see all hands quit work when the peddler arrived and lug out their containers and have them filled. Women would have theirs the same as men.

"This mill passed out of existence soon after and the machinery sold to the Antioch Paper Mill, if I remember rightly."

Pioneer Paper Company Opens Spokane Branch

Increased demand for their products is the reason given by J. H. Plunkett, general manager of the Pioneer Paper Company of Los Angeles, for the creation of a branch office at Spokane to take care of the company's distribution in parts of Washington and British Columbia. O. H. Weyman has been appointed manager of the new office.

Installation of the Spokane office was the first step in the company's expansion plans for 1927. The company already has branch offices in Portland and Seattle and is taking care of the central Rocky Mountain territory through a Denver office.

The Pioneer Paper Company manufactures composition roofing, shingles, plastic cement and other products.

B. C. Company Makes Initial Dividend Payment

An initial dividend of \$8.75 per share for holders of preference shares on record as of January 15, 1927, was distributed by the British Columbia Pulp and Paper Company on February 1. The dividend reflects the good management of President Lawrence Killam since the present company took over the defunct Whalen Pulp and Paper Mills on November 1, 1925.

The British Columbia Pulp and Paper Company has an issued capitalization of \$3,707,500 six per cent first mortgage bonds, \$1,500,000 seven per cent general mortgage bonds, \$556,200 seven per cent cumulative preference shares and 100,000 shares of no par value common stock.

For the year ending October 31, 1926, the net earnings available for bond interest, depreciation and reserves were approximately \$733,000, it is reported, while working capital amounted to \$1,477,000.

In taking over the Whalen interests the entire amount of first mortgage bonds and the preferred stock was issued in exchange for the Whalen first mortgage bonds. The exchange was made on a basis satisfactory to the bondholders. As a bonus representing the arrears of interest on the Whalen bonds up to November 1, 1925, one and one-half shares of preferred stock was given with each \$1,000 bond.

Coast Output and Consumption Estimated

Production of paper on the Pacific coast for 1926 has been estimated by a paper industry engineer at approximately 600,000 tons. Daily output was divided as follows: California, 600 tons; Oregon, 550 tons, Colorado, 50 tons; Washington, 750 tons; British Columbia, 680 tons.

Paper consumed yearly by Alaska and 11 states in the Pacific coast territory has been estimated at about 1,000,000 tons per year. States included in the estimate are: Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Texas, Utah, Washington, Wyoming and the territory of Alaska.

Customs Courts Decides Paper Tariffs

Three decisions by the United States Customs Court, involving three types of paper, have been made in favor of the Government, and therefore favor American paper manufacturers who have sought, through the import committee of the American Paper Industry, to have foreign papers properly classified in accordance with the tariff law. The three decisions found:

Kraft wrapping paper from Sweden to have been under-valued about 15 cents per hundred pounds.

Pearl coated envelope lining paper to be under-valued 5 French francs per ream. Also, the claimed discount of 2½ per cent was not allowed.

Pulp board for wallboard from Canada held to be subject to Canadian 5 per cent sales tax in addition to invoice value as part of the dutiable value.

The pulp board case is the first of many similar cases involving the same question to be decided.

J. H. Lawson Active in New B. C. Project

James H. Lawson, barrister and solicitor, who has been actively identified with the legal work of the Canadian Crown-Willamette Co., Ltd., with respect to the taking over by the company of the Campbell River project, has gone to Eastern Canada on business.

Crown-Willamette 1927 Reforestation Program Completed

THE work of planting denuded land with young conifer trees for the year 1927 having been completed, the Crown-Willamette Paper Company's reforestation crew withdrew from the upper Youngs River Valley, Clatsop County, Oregon, early in February, where it has been occupied since early this year. The crew set out between 250 and 300 thousand nursery seedlings of Sitka spruce and Port Orford cedar, including some alder and cascara, the latter being in the nature of an experiment. The seedlings were furnished from the company's own nursery near West Linn, which is capable of producing from three to four million trees annually. The company plans to continue its reforestation program from winter to winter, and expects to catch up with the denuded areas about 1931.

Four hundred and thirty-six trees, which are two years old when set out and which are placed 10 feet apart, are required for one acre. An inspector follows close on the heels of each worker. The work of reforesting an acre is considered a good day's work for one man. Precaution against fire in the growing forest is taken by surrounding 40-acre tracts with a 24-foot width wall of cascara or alder, these trees being used because of their ability to draw dampness, thus retarding a fire from spreading. It was also pointed out that these trees are green at the time of year when fires are rampant. These trees are set eight feet apart.

Although the cascara and alder are not being set out with a view of realizing returns on them when they attain maturity, it is pointed out that the former will yield marketable bark within seven or eight years, which will aid materially in supplying the drug trade with a valued commodity used in medicine that is rapidly disappearing from Northwest coast areas. It is probable that some of the alder may be used in the furniture industry.

Trees for reforestation are grown from seeds which are planted in 4x12-foot beds at the nursery, two and a half ounces of spruce cedar being required for a bed of this size. Cascara trees are started the same way, while sufficient slips of alder for present needs have been found growing wild. All seed is purchased a year ahead to insure an adequate supply. Soil from the area in which the beds are made is first subjected to analysis by qualified chemists and, if found to meet the exacting requirements, is treated with fertilizer and other compounds to increase its fertility.

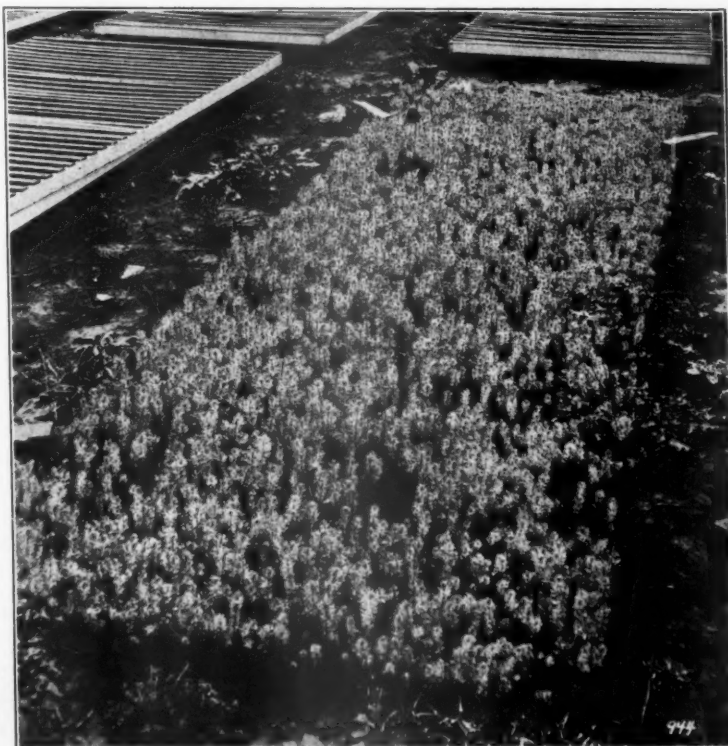
Logged-off land which has been effectually cleared by broadcast burning two or three years previous to planting is being used in the major project. The intervening time between prepara-

tion and planting is allowed that vegetation may start, which is of value in sheltering from the hot summer sun the young trees and promoting sturdy roots, it being declared that survival of the young trees is contingent on the roots getting a healthy start.

This policy of actively engaging in reforestation is indicative of the progressiveness of the Crown-Willamette Company. They realize the importance of reforestation in the West, and are taking the proper steps to insure a permanent supply of pulp wood. Such a policy is a very commendable one, and is in line with the work being carried on by the government. When everyone engaged in the industry realizes the importance of this phase of the work to be done, a great step forward will have been made in the development of the Pacific Coast on a sound and conservative basis. There is little question but what reforestation such as this company is carrying on, based on scientific principles, will ultimately prove to be one of the basic reasons why the western industry is bound to grow rapidly and extensively.

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Today is the time to send in your subscription to Pacific Pulp and Paper Industry. View thru these columns the growth of the industry on the Coast, and keep in touch with every phase of its development.



One of the Seedling Beds in the West Linn Nursery of the Crown-Willamette Company

Northwest Mineral Deposits Suitable For Pulp and Paper Making

By MILNOR ROBERTS

Part I

THE current interest in the development of the pulp and paper industry is leading to general inquiry as to deposits of the minerals needed in the industry that are found here in the Northwest. Fortunately it can be said at the outset that in the inland region tributary to the North Pacific coast and along the coast there are found deposits of all the substances needed in the industry. The number of such deposits is not yet fully recorded, and many of them have not been examined in detail but are known only from a few hand-specimens. On the other hand, in such a vast region and in one of such varied geology the chances are good that many deposits that now are not known at all will come to light, and that some concerning which we have only a little knowledge will finally prove to be useful. Many parts of the region have not been explored fully for even the metalliferous minerals, which are always the first ones sought, and it is probable that some of the minerals especially needed in pulp and paper making have been overlooked.

Sulphur

One of the first mineral substances that comes to mind in a consideration of the pulp and paper industry is sulphur. This element is found in the form of native sulphur in volcanic regions and also occurs in important quantities elsewhere in the gypsum type of deposit. In the Aleutian Islands in southwestern Alaska it has been found in several places and in the past some commercial production has been made there.

Sulphur is found very commonly throughout the Northwest in the form of sulphides of the common metals, especially iron, copper, lead, zinc, arsenic, antimony and quicksilver. Sulphides of all these metals are valuable for their metal content, although the sulphides of iron are not valuable for the iron content except under special conditions. In the usual treatment of these ores it is customary to roast-off the sulphur at an early stage of the process. The sulphur thus driven off is not saved in the average case, although in the Washoe copper smelter of the Anaconda Copper Mining Company at Anaconda, Montana, the sulphur is made into sulphuric acid. Sulphur is also being saved in California. For a number of years the Tacoma smelter of the American Smelting and Refining Company recovered sulphur from its roasting furnaces and marketed it in the form of anhydrous liquid sulphur dioxide. The plant in which this operation was carried on at Tacoma was dismantled a year or two ago but it is reasonable to suppose that when the demand for sulphur products becomes sufficiently strong in this region the Tacoma smelter would be in position to enter the market again. The Bunker Hill smelter at Bradley, Idaho, which treats sulphide lead ores from the Bunker Hill and Sullivan, Hecla, and other mines might also prove a source for sulphur products.

Pyrites

The suggestion is often made that the deposits of

pyrite and pyrrhotite on the coast of British Columbia and southeastern Alaska should be worked directly for the production of sulphur, in the absence of workable value in gold and silver. If the deposits that appear to consist of more or less solid sulphides prove in reality to be of that character and also to contain large tonnage, then the possibility of such a treatment of them is worth considering. Where deposits consist of the fine grains of sulphides scattered through country rock in the same manner as the disseminated copper ores of the porphyry mines, it is not likely that they would prove profitable to work for their sulphur content alone. Before roasting the sulphides it would be necessary to crush and concentrate them, which would be too costly for the proportion of sulphur contained. One of the low-grade copper mines on the coast in which the ore contains both pyrite and the copper sulphides, treats its ore in a mill for the purpose of concentrating the copper sulphides. In the past the iron sulphides have been discarded but now it is reported that they are to be shipped away for treatment for their sulphur content.

Limestone and Dolomite

In discussing limestone and dolomite it is convenient to treat the two rocks together, for two reasons. In the first place, no great demand has existed in the past for dolomite in this region, therefore the prospectors and field engineers have not searched for it and have not reported it at all fully. Secondly, dolomite is to be expected in limestone regions if at all, therefore, when searching for dolomite it is important to have in mind all the areas where limestone is common. It happens that the limestones of the Northwest are usually quite pure in composition. While they may be intermixed with shales at their borders, yet specimens of the clean limestone itself generally yield a high analysis in lime. However, some of them contain more or less magnesia and thus grade into dolomite proper, which contains approximately 30 per cent of lime and 22 per cent of magnesia. Incidentally it should be noted that most of the limestones and dolomites of the Northwest are crystalline, that is, marble, as a result of the action of the geologic agencies to which they have been subjected in our mountainous regions.

In Oregon large bodies of limestone are found in both the southwestern and the northeastern parts of the state. In the coast range in Josephine County, west of the Shasta route of the Southern Pacific Railway, the limestone beds have become widely known on account of the great caves that they contain, which have become points of scenic interest. Most of the deposits are so far distant from the present main line railways that they are not available today as commercial sources of limestone, but the region is rich in timber and in agricultural possibilities that will lead to the building of branch lines and logging railways.

The Blue Mountains of northeastern Oregon and their spurs and outlying ranges contain many deposits

of limestone. Some of those along the main line of the Oregon-Washington Railroad and Navigation Company between Pendleton and Huntington have been opened for the production of material for both lime-burning and cement-making. The Wallowa branch line of the Oregon-Washington enters the northerly part of the Blue Mountains and there also large deposits are found. A word of caution is needed to those who plan to operate in this region for the first time. The Blue Mountains are surrounded by the Columbia lava field and the region was once a scene of great igneous activity. Of the numerous deposits that the writer has examined in the Blue Mountain region the majority contain dikes of igneous rock which cut through the earlier rocks. While dikes that penetrate a limestone bed may not injure it commercially, yet their presence needs to be taken into account when planning operations.

In Washington the beds of limestone are much more common in the northern than in the southern half of the state. The northern Cascades contain deposits in several districts; those in Skagit and Whatcom counties have been worked for many years and used in cement-making as well as in lime-burning. In the San Juan Islands the Roche Harbor limestone has been burned for limestone on a large scale and other deposits are under development. Northeastern Washington contains extensive beds of limestone, as do also the neighboring portions of Idaho.

The coast regions of British Columbia and Alaska contain many deposits of limestone and a much less number that consist of dolomite. The deep sculpturing of the region by glaciers exposed the beds very fully but since the recession of the glaciers the deposits of glacial drift, the heavy growth of timber, and the forest carpet of mosses and shrubs have combined to mask the outcrops, at least at low elevations. Diligent search for exposures and a little prospecting work in the form of trenches at carefully selected points often serve to reveal the true facts regarding a deposit that at first seems hopelessly obscured, so far as a commercial determination of its size is concerned. Texada Island, 60 miles northwest of Vancouver, shows many beds of limestone, and many other islands contain it in abundance. Prince of Wales Island, on the Alaska side of the boundary line, has furnished marble for the markets of the states. It may be noted in passing that some of the beds found there possess stone of beautiful colors; twenty years ago the writer, while engaged through the season in exploration of the Alaska Moonshine mine on the dividing ridge of the island, built a blacksmith shop of a beautiful pink marble with dappled markings, possibly the only marble blacksmith shop in existence. The Copper River region north of Prince William Sound contains vast beds of limestone which are above timber line and very largely exposed to view through stream and glacial erosion. In the vicinity of the Kennecott copper mines and elsewhere along the line of the Copper River and Northwestern Railway, limestone is a common rock.

Clays

Clays in great variety are found in both the coast and inland regions. Deposits have been developed and used to a greater extent in the Puget Sound and Spokane regions than elsewhere in the Northwest. Certain clays in the neighborhood of Spokane and the adjacent parts of Idaho seem to have possibilities for

use in paper making but have not yet been fully tested for this purpose. The china clays that have been used in the mills thus far have come from the British Isles. The Northwest Experiment Station of the United States Bureau of Mines, which works in cooperation with the College of Mines of the University of Washington, is planning a thorough series of tests on clays that might prove suitable for use in making bond papers. With the completion of the second half of Mines Laboratory, equipment will be available for washing these clays to the fullest extent with the object of preparing them for the exacting demands of the paper industry.

Washington Pulp and Paper Corporation to Be Operating Soon

With actual construction virtually completed, except for a few odds and ends of concrete pouring and glazing, work on the new addition to the Washington Pulp and Paper Corporation's plant at Port Angeles is now largely a matter of machinery installation and preparation for a water supply.

The new building is to house a paper machine, which will give the plant three machines with a daily production capacity nearly double the present tonnage, which is approximately 140 tons.

Installation of the paper machine is now centered on the drying rolls. A few of these rolls have been placed, this being practically the only work that has been done on the machine proper. In the wet room, two large Oliver continuous filters, which will take all foreign matter from water used in the machine, have been placed in their positions.

An elaborate ventilating system overhead in this part of the plant has been partly installed, with a number of large fans in place at present.

A battery of six grinders, each operated by a 1000 h.p. motor, is nearly completely installed, with workmen now cleaning up odd bits of the work. This group gives the plant a total of fifteen grinders, nine being in use now in the old plant. A ventilation system to draw off the great amount of steam that arises from the grinders, has been installed over these machines.

The power substation now used by the plant is nearly an eighth of a mile distant from the mill. A new substation, to replace this and to handle both the power now obtained from an old dam on the Elwha River and that which will be flowing down from the new Glines Canyon project, is being erected at the lower end of the mill. Three huge oil cooled transformers are being placed in their stations below this.

In various sections of the plant, great rows of switches, and other electrical equipment have been installed, but much wiring and small jobs yet remain.

It appears that hopes of the company that the new plant would be in operation shortly after April 1 must be abandoned, for much installation, chiefly of the paper machine itself, yet remains. In addition, laying of a main sufficient to supply the plant with the needed water, will take several weeks, and the paper company and Port Angeles city commission had not yet come to terms concerning the water supply at the time of this report.

Chris Kuppler and Sons, a Port Angeles contracting firm, built the new addition. They also erected the first unit of the plant, shortly after the war.

Engineer A. J. Bennet, of the Washington Pulp and Paper Corporation, is active supervisor over the entire project.

Hardwoods May Be Utilized for Paper

A new pulping process which produces a high yield of news print from the hardwoods and gums common to the North, East and South, has been developed in the forest products laboratory at Madison, Wisconsin, according to the U. S. Forest Service.

Use of a rod mill to further the mechanical reduction to pulp and the decreased use of chemical treatment is said to bring about a high yield by reducing the amount of fibre which would go into solution in the treating liquors in an all-chemical disintegration process. The distinctive feature of the new semi-chemical process is that only a mild chemical treatment is used before the wood in the form of chips is reduced to pulp consistency in the rod mill.

The rod mill is a hollow, horizontal steel cylinder half filled with bronze or steel rods. Reduction of chips is accomplished by rotating the cylinder.

Forest officials declare that paper of the weight and thickness of newsprint, made wholly from semi-chemical pulp of black, tupelo, or red gum, or aspen, birch, or maple, was found to have a greater strength than the present commercial newsprint. In the case of the gums it is said that the color of the paper can equal or excel the standard newsprint if the black or red heart wood is excluded.

Pulp made by the new process from aspen and birch can be substituted for over 50 per cent of the standard newsprint mixture of ground wood and sulphite pulp

without sacrificing the quality, it is said. In fact, the forest service points out that ground wood and the semi-chemical pulp can be combined without sulphite pulp, although the sheet made without sulphite is somewhat weak when wet and requires care in handling on the wet end of the paper machine.

Zellerbach Company Announces Promotions

The Zellerbach Paper Company has announced several changes in the executive staff, taking effect in February. N. M. Brisbois, who has been general superintendent of the Stockton division of the National Paper Products Company for the past three years, has been appointed general operating manager of all Pacific Coast divisions. In his new capacity Mr. Brisbois will supervise the operations of all of the plants of the company on the Pacific Coast. He has had many years of manufacturing experience and is considered particularly well fitted to fulfill the duties of his new position.

To fill the vacancy caused by his promotion, Mr. Brisbois has chosen Paul H. Keller for the position of general superintendent of the Stockton division. Mr. Keller has been in this division for about four years and has had considerable board mill and container plant experience, prior to joining the organization. For the past year or more he has been assistant to Mr. Brisbois, and is thus especially well informed with reference to the operations of the division.

Power For Pulp and Paper Making

By H. J. GILLE

General Sales Manager, Puget Sound Power and Light Company

SINCE the first paper making machine was invented by Louis Robert in 1798, the fundamental principles of such machinery have changed but little. The Fourdrinier in use in our great paper plants today is still very similar to the first one built, except for

brought the steam engine into use, later steam turbines, and this apparatus was used for many years. However, with the development of electrical machinery, pulp and paper manufacturers found it adapted to their use, and it became the outstanding type of power in such factories.

Not every section of the country is blessed with an abundant supply of water power for conversion into electricity, a method which is much more economical and practical than that of using coal or oil to generate steam to operate engines and dynamos. However, the Northwest, and particularly the State of Washington, is fortunate in having abundant water power resources. Washington has greater horsepower per square mile than any other state in the nation, as shown by figures issued by the United State Geological Survey. Washington has 125 horsepower; Oregon 68.4 horsepower; Idaho 60.4 horsepower; California 49.4 horsepower; Montana 28 horsepower. The maximum potential horsepower of the United States is estimated as being 53,905,000 horsepower, of which 8,647,000, or one-sixth of the nation's total, is within the State of Washington.

With an abundance of raw material and electrical power available, the pulp and paper industry in the Northwest is bound to grow. In the last two or three years, the industry has had an increase of from 50 to 100 per cent each twelve months. There is every indication that it will continue to grow at the same pace for some time in the future.



H. J. GILLE

minor details. However, in the 130 years since the introduction of machinery into paper making, the types of power used for propelling the wheels of the industry have varied considerably.

In this country, the first machines were turned by water power. Needless to say, this type of power was very crude for making as fine a product as paper, and new methods were sought. The next change of power

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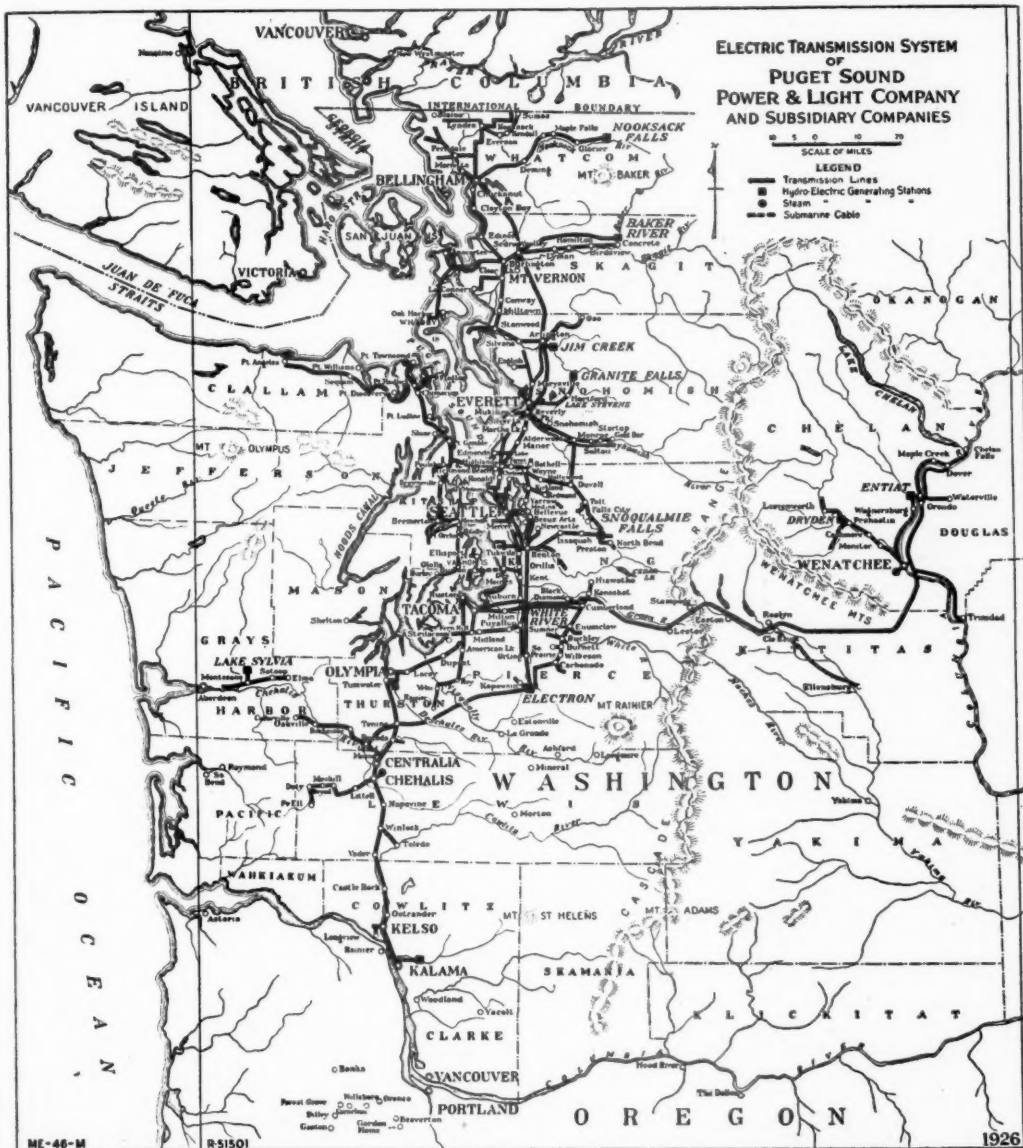
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Western Washington is peculiarly adapted to the development of pulp and paper mills. Here we have the timber in vast quantities; we have an almost unlimited supply of fresh, pure water, one of the chief essentials to pulpmaking, and above all we have an abundance of hydro-electric power from our mountain streams.

It is estimated that it requires 100 horsepower for each ton of daily capacity of newsprint mills. Modern paper mills are now using electricity to operate saws,

plants in Western and Central Washington. In addition this company owns and operates steam plants with a capacity of 45,380 horsepower, making a total of 230,560 horsepower of electrical energy now available on this system. All these water power and steam plants are interconnected.

This company always has maintained an adequate supply of electric power in advance of the needs of the district it serves. No industry ever has been turned away from any district reached by this company's lines



barkers, grinders, conveyors, beaters, pumps and other necessary machinery. The latest paper machines are driven by electricity, which permits higher speeds, better control of the speed and the measurement by electric meters of the amount of power used by each machine.

Throughout Western Washington ample electric power is available for the pulp and paper industry. The Puget Sound Power & Light Company has a total of 185,180 hydro-electric horsepower available from its

because of lack of adequate power. The Puget Sound Power & Light Company serves over 420 communities, extending from Bellingham on the north to the Columbia River on the south and eastward as far as Wenatchee. In this rich territory, destined to be one of the country's greatest pulp and paper sections, the electric power of this company is always available for the continued expansion of industry. By the time any new paper plant is ready for operation, our power resources will be ready to meet its requirements.

Port Angeles Power Project Nearly Complete

ON the Olympic Peninsula, The Washington Pulp and Paper Corporation is known to be composed of men who do their work without wasting energy on noise and display, but in a quiet, efficient and thorough manner. Nearly a year ago, it became known that the company was soon to erect an addition to the plant which would double its original capacity. The people of Port Angeles gave little thought to how the added wheels of industry would be propelled.

About that time there were rumors that a new dam would go up in the Elwha River, a stream but a few

the banks of the river and was completed last summer. This road starts from the so-called "Covered Bridge" on the Olympic Highway, and runs four miles along the east bank to the point where the crossing is made on the "Soldier Bridge".

Before a cubic foot of concrete could be poured for the footings, a 550-foot diversion tunnel was driven, to carry the water until the dam was partially complete. At the same time, a basin behind the dam was cleared of timber and the waste burned. The new dam will back the water up a distance of five miles, to the mouth of Cat Creek.

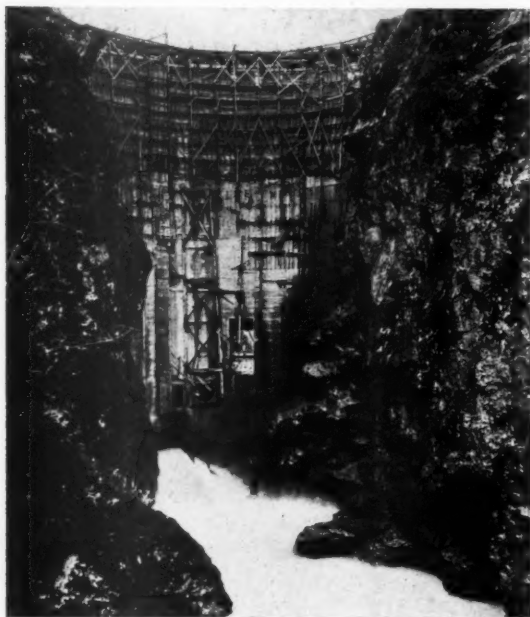
It is expected that over 10,000 horsepower will be sent into the new Port Angeles mill from the power house, which is being constructed a few rods from the dam. Down inside the power house, the boilermakers are now installing the turbine itself, through which the precious "white coal" will eventually be obtained.

The penstock, which carries water from the dam through a 550 foot tunnel hewn through solid rock down to the power house, is now almost completely installed, and workmen are painting the part that is in place. A 100 foot surge tower, situated at the crest of the hill immediately above the power house, has been raised also.

Even now wild elk gaze down the slope of the surrounding hills at the men working on the project. Until last year, the only travel through this region was an occasional passer along the Forest Service trail. The truck drivers often see bands of elk on the road to the Olympic Highway.

It is thought that the addition to the pulp and paper mill will be ready for operation shortly after April 15, and engineers at the dam hope to have the power project completed at the same time.

C. A. Whitmire is in charge of construction and has actively supervised this project. It is estimated that when complete, it will cost approximately two million dollars.



The New Power Dam in Glines Canyon, near Port Angeles, Washington

miles from Port Angeles, to supply electrical energy for the new paper mill unit and to assure power for possible additions after that. These rumors aroused little comment, but before the majority of the citizens seemed to become aware of any unusual industrial activity on the Elwha, a miniature town, capable of housing two to three hundred men, had been built on the edge of Glines Canyon, 18 miles southwest of the Gate City, and the beginning of a concrete wall to check the river had been made in the canyon.

Today, two hundred men are rushing to completion the great dam which will soon harness the swirling waters on their way to the Strait of Juan de Fuca. The wall has risen to a height of 190 feet, with 210 feet set as the ultimate goal that will mark the end of the work. Concrete pouring is soon to commence on the dam's top wings, which will rest on natural rock abutments at the canyon's sides.

The building of the dam was only a small part of the immense amount of work to be done. Before work was started, a road five miles long was built along

Research Laboratory For Canadians Assured

Intent upon going into research work, the Canadian Pulp and Paper Association at its meeting in Montreal on January 28 passed a resolution that will mean the building of a research laboratory at McGill University.

At a special meeting of the association on June 25, 1926, the preliminary steps were taken and a resolution adopted to create a company or association to build the laboratory. The proposed company was authorized to issue first mortgage bonds in the amount of \$350,000. The entire amount has been subscribed by the members of the Canadian Pulp and Paper Association and McGill University, the latter having agreed to take not to exceed \$50,000 worth of the bonds as part of the \$100,000 sum that is to be contributed to the university for maintenance and administration of the laboratory.

The January meeting authorized the officers of the association to proceed with the financing and building of the laboratory "at the earliest possible moment".

MILL AGENTS

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PAPER

High Density Bleaching

The question of the bleaching of pulp, particularly with reference to the density at which it is carried on, is one of importance to pulp manufacturers. A study of the matter will show that careful checking of the bleaching process may result in a considerable saving in sulphur and bleach, as well as the important element of time. A. D. Merrill of the Stebbins Engineering Company has studied this process and the Technical Association of the Pulp and Paper Industry has published his article in No. 1 of Series 9, the major points of which are given in this article.

THIS article will cover only densities up to 17 per cent air dry which is relatively high in comparison with eight per cent density, but relatively low in comparison with 30 per cent. However, it is believed that those interested in bleaching are only interested in what it is possible to accomplish with apparatus and methods now available, which limits us to densities below 17 per cent.

Result of Both Cooking and Bleaching

Pure cellulose is the result of both cooking and bleaching. Any lignin not removed in the cooking process must be removed in the bleaching process. Sulphite pulp has been bleached in the Semco bleaching blower at all percentages of total sulphur dioxide between 0.08 and 0.45 hot test, and it has been found that bleaching above a density of 12 per cent has a tendency to make the characteristics of the resulting pulp the same whether this pulp was originally cooked hard or soft, providing the color of the bleached pulp is the same.

Enough data are not as yet available to positively prove this point, but it is known that pulp can be cooked much softer with a resulting saving in both sulphur consumption and bleach consumption and obtain a pulp which has crepeing characteristics similar to a very hard pulp, which was formerly bleached at a density of about four per cent.

There is apparently no great saving in bleach consumption between 10 and 17 per cent consistency, but the final product is much better at consistencies above 12 per cent. All other factors being equal, no change in bleach consumption or characteristics of the bleached pulp between 12 and 17 per cent consistencies has been noticed. In the Semco standard unit, it is possible to bleach at all densities up to 17 per cent air dry but the only advantage in going over 14 per cent is in getting more pulp in the same space, which however uses more power.

Color of the Finished Product

The color of the finished product should receive serious consideration. Most paper makers insist on a high color regardless of whether the bleached pulp is to be used in a white or a colored sheet. Specialists in the dyeing of pulp say that an absolutely pure pulp is very hard to dye. It is also understood that if the bleached pulp is not brought up to a high color, the consumption of dyes will be lower and a more uniform product will result. This point should be considered fully, as it is a waste of time, labor and material in highly bleaching a pulp if this expenditure is going to increase the cost of coloring later.

*From High Density Bleaching, by A. D. Merrill, Stebbins Engineering Company, with permission of Technical Association of the Pulp and Paper Industry.

Advantages of Bleaching at a High Density

The advantages of bleaching pulp at a relatively high density are as follows:

- Less space required
- Smaller investment per ton
- Less power per ton of pulp up to 14 per cent density
- Lower steam consumption
- Lower bleach consumption.

In general, the resulting product when bleaching is carried on between 12 and 14 per cent density is better than at lower densities. The use of steam for heating up to approximately 100 degrees F. saves on the bleach consumption, the power and the time of bleaching, and improves the finished product. Compressed air blown in under the surface of the pulp shortens the bleaching time and reduces the power required on the agitator, but has no other noticeable effect. It is believed that the use of air in this manner carries off the waste product produced in bleaching. Oxygen in this air is not nascent and has little oxidizing power, but it does assist in circulation and shortens the bleaching time.

When bleaching is carried on in a covered tank, the carbon dioxide formed produces a blanket over the surface of the pulp and retards the bleaching action, unless the gases are blown out or exhausted.

High Density Bleaching in One Plant

Take as an example one plant where a Semco bleaching system is installed. The average bleach consumption for one month based on all powders mixed is 12.75 per cent, bleaching continuously. At another plant, using the batch system, the consumption was 13.7 per cent. The minimum bleach consumption at this plant was 62 pounds of chlorine per ton of pulp, equivalent to 178 pounds of 35 per cent bleaching powder or 8.9 per cent. The maximum was 128 pounds of chlorine on an extra hard stock which is equivalent to 18.25 per cent of 35 per cent bleaching powder. In both plants about half of the pulp is cooked hard and the other half soft.

Below are data giving the results of two lots bleached by the batch method, one hard and the other soft stock. These data were taken from the daily records kept at the mill and are believed to be typical.

BLEACHING SOFT PULP

Stock—Mixed, hemlock and balsam. Easy bleaching.
Wet weight of pulp, 21,500 lb. @ 35% equals 7,525 lb. a. d., equals 3.76 tons. 12½ in. of 30 g.p.l liquor used.
74.67 gal. per inch equals 923 gal. bleach liquor used.
923 gal. @ 0.25 lb. per gal. equal 233½ lb. Chlorine.
233½ divided by 3.76 equals 62 lb. chlorine per ton of pulp, equivalent to 178 lb. of 35% bleaching powder per ton or 8.9% of 35% bleaching powder.

(Continued on page 28)

Complete line of

ACID RESISTING

BRONZE VALVES

and

FITTINGS

DORAN BRASS FOUNDRY CO.
75 Horton Street, Seattle, U. S. A.

Y Blow-Off Valves

Digester Fittings

Centrifugal Pumps

***Antimonial Lead Cocks
and Fittings***

For Use in Pulp and Paper Mills

Shelton Plant Nearing Completion

CONSTRUCTION of the pulp mill of the Rainier Pulp and Paper Company is progressing very satisfactorily, and will soon be complete. According to L. S. Burdon, general manager of the company, indications now are that pulp will be being produced some time during the first part of April.

The unit will have a capacity of 110 tons of bleached sulphite pulp. Raw material will be obtained from waste hemlock and small quantities of spruce from the Reed mill of Shelton, and the Eureka mill of Hoquiam. The Reed mill will also furnish steam and power to the plant. Arrangements have been made for a large timber reserve, in case the mill waste supply should at any time prove to be insufficient, but it is not anticipated that this will be necessary.

The acid towers have been completed for some time, and the Jensen system is being installed. The digester building is practically complete, and three mammoth digesters are in place. The concrete work

on the entire plant is practically complete, even to the top of the seven stories of the digester building.

Foundations for the machines are in, to a great extent, and the screens are being installed. The wet machines are being set up, and probably will be in by the middle of March. From now on the work will progress rapidly, as the most time-consuming part is done. Over 2,000 piles were driven for foundation, and the whole structure is on concrete heavily reinforced with steel. The size of the main structure is 110 feet by 1500 feet. Plenty of space for expansion has been provided for, land being filled in by an electric dredger for future foundations.

L. S. Burdon, general manager, is in active charge of the construction. The engineer in charge is D. R. Hettelsater, and he is assisted by L. Rubicam and Mr. Griffiths. Chris Kuppler and Sons, Port Angeles, are the contractors doing the construction, with George Kuppler in charge. The company is headed by E. M. Mills as president, and K. O. Fosse as vice-president.

(Continued from page 26)

Filling time	1:15 hr.
Bleaching time	2: 5 hr.
Dumping	0:15 hr.
Total cycle	3:35 hr.
Density after addition of bleach liquor	16.9% a. d.
Temperature at start	70° F.
Temperature 1:30 hr. after filling	102° F.
Steam shut off at this point.	
Final temperature when dumped	110° F.
Average hp.	29.6
Power per ton of pulp, hp.	26.25
Fiber loss, approximate per cent	4
Total dirt counts before bleaching	339
Total dirt counts after bleaching	114
Total dirt removed, 225 equal to 66.6 per cent.	
Color very good.	
Steam per ton of pulp, lb. (approximately)	600

BLEACHING HARD PULP

Stock—Tamarack—Hard.
Wet weight of pulp, 18,000 lb. @ 34.4% equals 6,200 lb. a. d. 20 in. of 30 g.p.l. liquor used equals 372.35 lb. of chlorine, divided by 3.1 equals 120 lb. of chlorine per ton of pulp, equivalent to 17.15% of 35% bleaching powder.

Filling time	1:10 hr.
Bleaching time	3: 0 hr.
Dumping time	0:15 hr.
Total cycle	4:25 hr.
Density after addition of bleach liquor	14.39% a. d.
Temperature at start	70° F.
Temperature 2 hours after starting	105° F.
(Steam shut off)	
Average hp.	25
Power per ton of pulp, hp.	33.87
Fiber loss, approximate per cent	5
Total dirt counts before bleaching	338
Total dirt counts after bleaching	89
Total dirt removed, 249 equals 73.5 per cent.	
Color very good.	
Pounds of steam per ton of pulp, about	750

The Continuous Method

A. D. Merrill of the Stebbins Engineering Company believes that the continuous method is the most easily controlled, operates with the lowest bleach consumption, and gives the best results in the color of pulp and other characteristics. Batch bleaching is too much of a guess, as no one can estimate exactly how much bleach a given batch of pulp will require. If a man is pushed for production, he will add an excess of bleach, and if not pushed, will often put in a little less than he thinks is needed. If he uses less than is actually required, he must add more later, thereby wasting time

in the bleaching process. If he adds an excess of bleach, it wastes the bleach, and takes a longer time to work the bleach out of the pulp. Both of the methods are wasteful of bleach, time and fiber. Also, in bleaching by the batch method, more labor is required, as well as a much larger investment in bleachers and thickeners.

When bleaching continuously, the operator uses a color pad in comparing the pulp leaving the first cell of the series, and he can keep this color very uniform. Another color pad is also furnished for comparing the amount of chlorine in the pulp as shown by the regular starch iodine indicator. By these two guides he is able to regulate the amount of bleach used, and to control the color of the pulp leaving the last cell of the series so that a more uniform color is obtained with a lower bleach consumption.

Saving of Powder When Bleaching Continuously

Indications are that in the continuous bleaching method there is a saving of at least two per cent in bleaching powder over the batch method. It is also claimed that a standard can be maintained by the continuous method which cannot be approached by the batch method. Only one-half to one-quarter of the labor required by the batch system is necessary under the continuous system.

In bleaching, density should never be the controlling factor, but rather should be one of the controlled factors. To paraphrase Edouard Estaunie, "In bleaching, density should be a servant and not sit at table."

Victoria Paper Man Dies

Following a long illness, the aftermath of war service, Sidney Colgate of the Sidney Roofing and Paper Company of Victoria, B. C., died on February 9 at his home in Victoria. The late Mr. Colgate served overseas as a lieutenant in the B. C. Bantams and was severely wounded while serving with the 47th Battalion, C. E. F. He was born in Sevenoaks, Kent, England.

Announcement

WE are developing a full and complete line of machinery for the manufacture of pulp by all processes. Having a complete engineering force we respectfully request that you submit to us all your requirements for this class of machinery and problems in engineering which will receive our prompt attention.

Being located as we are in the cen-

ter of the pulp manufacturing industry of the West and equipped with one of the largest and most modern plants for the manufacture of machinery, we are admirably qualified to give service and build machinery of the very highest class for which SUMNER has always been noted.

Up to the present time we have completed or have under construction the following list of pulp machinery:

51" Chipper
30x12 Re-chipper
Refuse Hogs
Single Press Wet Machine
Double Press Wet Machine
Pulp Baler
Vertical Agitators
Horizontal Agitator
Pulp Grinders
Quick Opening Stock Valves
Cast Iron Digestor Valves for Soda Process
Herringbone Reduction Gear Drives
Necessary Transmission Machinery—
Conveyors and Conveyor Drives
Steel Tanks
Complete Cut-up and Chipping Plants

SUMNER IRON WORKS

Manufacturers of ENGINES, BOILERS, TRACTORS, MILL and MARINE MACHINERY

Address all correspondence to the main office and plant at Everett, Wash.

PORTLAND, ORE.
710 Lewis Building

Bentley's Code Used
Cable Address: "Sumner"

VANCOUVER, B. C.
Canadian Sumner Iron Works

Construction of Tumwater Paper Mill Progressing Rapidly

Plant to Be Ready by June 1—Olympia Chamber of Commerce Endorses Project

WORK on the ground wood plant and the wrapping paper mill of the Tumwater Paper Mills Company is progressing very satisfactorily, according to T. Osmund, president of the company. Indications are that the plant will be completed and in operation early in June.

The site for the mill consists of 17 acres at the point where the Deschutes River empties into Puget Sound, near Olympia, Washington. The buildings were formerly occupied by the Tumwater Brewing Company, and are ideally suited to the purpose to which they are now being turned. In addition to the buildings already there, there is in the course of construction a machine room of steel, concrete and brick of sufficient size to house two large paper machines. The work on this building is progressing rapidly and the machine will be installed about the latter part of March. The wet machines have been received and are waiting to be installed.

A 24-inch well is being sunk near the mill, and indications are that the flow will be sufficient for all requirements. The first flow was struck at 46 feet, in a stratum of sand. The drillers are now going thru gravel and are continuing down expecting to reach other strata which will produce even more. The ultimate depth will probably be 90 to 100 feet, and it is hoped that a flow of two to two and a half million gallons a day will be obtained. In case this source of water fails to materialize as expected, water will be obtained from the dam of the power company nearby, at a charge of only two and a half cents per 1000 cubic feet.

Raw material will be brought in by truck, rail or barge, and arrangements have been made for a considerable supply of cord wood at a favorable price. Hog fuel is to be obtained from Olympia mills.

All power will be electrical, and arrangements have been made with the Puget Sound Power and Light Company so that water power development by the mill will not be necessary.

The plant will be served by two transcontinental railroads, by auto truck and barge transportation. The site is but two miles from the center of Olympia, and will not in any way be isolated from the advantages of the city.

The first unit will consist of a 134-inch Beloit paper machine of the latest type, with necessary equipment, and a ground wood mill. The capacity of the paper unit will be 50 tons per day, and that of the ground wood mill 20 tons daily. Provisions have been made for the addition of another paper machine and the addition of a 50-ton sulphite mill, and a larger ground wood mill. The present investment is about \$700,000, and when the expansion is complete, it will total about \$1,280,000. The ultimate capacity of the plant will be 70 tons of wrapping paper per day.

L. A. DeGuere of Wisconsin Rapids, Wisconsin, has full charge of the entire installation. In addition to being the engineer of the plant, he is a stockholder in the company and will be associated with it per-

manently in an advisory capacity.

The management will be in the hands of seven directors and the active direction of the company will be carried on by men of long experience in the paper industry. T. Osmund, president of the company, has been associated with the industry on the Coast for 25 years, and for the past 14 years was secretary and treasurer of the Hawley Pulp and Paper Company of Oregon City, Oregon. R. L. Shepherd, assistant secretary and treasurer of the company, was connected with the Hawley Pulp and Paper Company for the past eight years as timber superintendent and traffic manager. W. C. Moore, for 14 years accountant for the same firm, and for the last year head bookkeeper of the St. Helens Pulp and Paper Company at St. Helens, Oregon, has been engaged as accountant.

A contract has been made with the Johnson-Lieber Company to handle the sales, and due to the fact that there is no other mill on Puget Sound making only wrapping paper, indications are that no difficulties will be encountered in disposing of the product.

The Olympia Chamber of Commerce, upon receiving a report from the Tumwater Paper Mills Company, investigated the project very thoroughly, and upon the report of their committee, heartily endorsed the enterprise. In this report, the committee is quoted as follows: "It appears that these buildings so substantially constructed by the brewing company are well adapted to the use of the paper mill. The cost at which these buildings were put into this organization plus the expense of what remodeling may be necessary to convert them into a modern paper plant is much less than the price for which new buildings could be built at this time, and in addition, it is generally conceded that they are of better construction than is to be expected at present.

"In these well located and substantial buildings is to be installed the most modern, economical and substantial paper mill machinery obtainable. Notwithstanding this fact, it is confidently expected by the management that this plant will be constructed at a cost of from \$18,000 to \$20,000 per ton of daily capacity. Excellence of construction and equipment is not being sacrificed to parsimonious expenditure, and economy of construction coupled with satisfactory location and high class equipment should result in economy of operation."

O. A. Jorgenson Makes Tour Following Convention

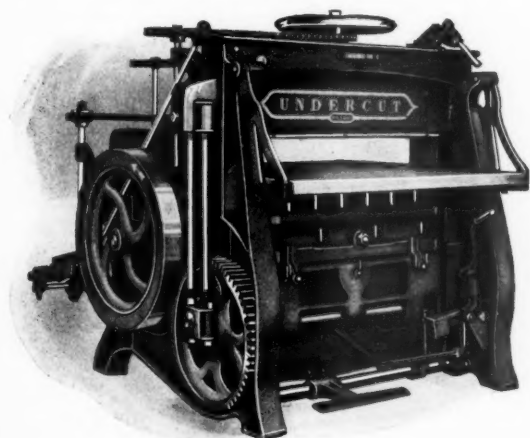
O. A. Jorgenson, treasurer of the British Columbia Pulp and Paper Co., Ltd., was one of the Western representatives of the industry to attend the convention of the Pulp and Paper Association of Canada at Montreal during January. Mr. Jorgenson's company has been shipping pulp to the East coast of the United States. Mainly for the purpose of making contact with the consumers of this pulp in the East, Mr. Jorgenson continued eastward from Montreal. He went to New York, Philadelphia, and then on to Baltimore.

PAPER MILL MACHINERY

JORDAN ENGINES—PUMPS—"RAINSTORM" SHOWER PIPES

The Undercut Trimmer

The AUTOMATIC PAPER CUTTING MACHINE, designed for PAPER MILL SERVICE, is of rugged and compact design, of great strength yet with simplicity on which you can with accuracy, quickly handle and cut any grade of paper or cardboard.



The AUTOMATIC CLAMP is governed in the pressure put upon the stock by the resistance to the knife in cutting through the stock. The tougher the stock, the greater the pressure will be upon it. The pile to be cut will automatically have the proper pressure put upon it, regardless of its height or width.

The BACK GAUGE has a face which is finished absolutely square to the side gauges, and is also parallel to the knife, regardless of its distance from the knife. The standard back gauge is in one piece. A triplicate back gauge can be furnished whereby three piles may be trimmed to different dimensions at each stroke of the knife.

THE POWER BACK GAUGE is furnished as regular equipment on all machines from 56" and up. It can be supplied on power machines smaller than 56". This is a device for quickly moving the back gauge back and forth by power. The control lever is conveniently located on the front of the machine and within easy reach of the operator. For making accurate adjustment a nickel plated hand-wheel is provided, which is located on the top of the cutter.

THE STARTING DEVICE on the UNDERCUT adds greatly to the safety of operation, in that it positively insures against accidental starting of the machine. On most cutters, the machine can be started by moving the starting handle in one direction, while on the UNDERCUT two separate movements in different directions are required.

PAPER BAG MAKING MACHINERY

—Established 1828—

The Smith & Winchester Mfg. Co.

Dept. MFP.

SOUTH WINDHAM, CONN.

George P. Berkey Elected Vice-President of Crown-Willamette

Another Easterner attracted to the West by the outstanding natural advantages of this section for the manufacture of pulp and paper is George P. Berkey, recently elected vice president of the Crown-Willamette Company. Mr. Berkey assumed his new duties in the Portland offices on February 1.

Before coming West, Mr. Berkey had spent practically all of his 20 years experience in the paper business with the Consolidated Water Power and Paper Company, large manufacturers of newsprint, sulphite and specialty paper at its several mills in Wisconsin.



GEORGE P. BERKEY
Vice-President of the Crown-Willamette Company

Subsidiary to this company is the Thunder Bay Paper Company of Port Arthur, Ontario, with which he was also connected.

He joined the Consolidated company at a time when the company had only one small mill, and had an active part in its subsequent large development, finally being made vice president and general manager of all the Consolidated properties. This position he had held for several years prior to his recent resignation to accept his new position.

Mr. Berkey has established his family in Portland and is busy becoming acquainted with the many mills and large operations of the Crown-Willamette Company.

Another addition to the staff of the Crown-Willamette Company is in the person of Frank N. Youngman, who until recently was the manager of the mill of the Thunder Bay Paper Company near Port Arthur, Ontario. Mr. Youngman is now manager of the Pacific Mills Company, with executive offices at Vancouver.

Canadian Association Sets Convention Date

The Canadian Paper Box Manufacturers' Association will hold its annual convention at the King Edward Hotel, Toronto, on June 20 and 21. The committee for the convention now has plans well organized for the gathering, and are already making arrangements in Toronto.

Oregon Interests Buy Howe Sound Mill

The Columbia Pulp and Paper Company, a new organization which has taken over the various Lead-better mills in Salem, Oregon, Los Angeles, and Vancouver, Washington, has acquired the mill of the Howe Sound Pulp and Paper Company. This plant is located on Howe Sound, 30 miles from Vancouver, B. C., and is said to have been sold at a figure close to \$250,000 although its original cost was about \$1,000,000. Since the war, the concern had been unsuccessful. With the mill was purchased about 50,000,000 feet of timber.

The mill will be remodeled and will be devoted to the manufacture of kraft paper pulp. This pulp will no doubt be utilized chiefly by the mill at Los Angeles, although some will be converted at the other plants. Heretofore, kraft paper has not been manufactured by the Columbia Pulp and Paper Company, and the addition of this unit will round out their line of products.

Powell River Company Improves Town

An extensive program for improving the town in which it is located has been mapped out by the Powell River Company, Ltd. The existing town has been built entirely by the company, the residences being disposed of to the employees. In addition to building more homes, the company is planning to construct a department store, motion picture theater, community hall, Avenue lodge extension, hospital and an isolation hospital. The project will require about three years to complete.

These improvements follow closely on the heels of the extensive additions to the plant itself, when the capacity was practically doubled. This great development will require a larger town, making necessary this improvement program. It is understood that the ultimate expenditure will be about \$1,500,000.

Westminster Company Buys Patent Rights

Following the purchase of Canadian patents which give the company exclusive right to sell in Canada and the British Empire, the Westminster Paper Company, Ltd., of New Westminster, B. C., has installed new machinery for the manufacture of paper napkins and towels by a new process.

New Westminster Manufacturer Goes East

W. Gorman, president and general manager of the Canadian-Scottish Paper Co., Ltd., is leaving Vancouver the latter part of February to go East as far as Winnipeg on a business trip.

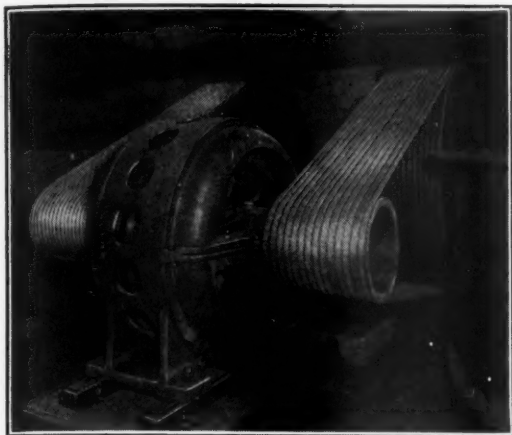
New Fourdrinier at Columbia River Plant

A new 136-inch Fourdrinier is to be installed in the plant of the Columbia River Paper Company of Vancouver, Washington. This will considerably increase the output of the mill, and will be used for the manufacture of tissue and grease proof papers.

Grays Harbor May Have Kraft Mill

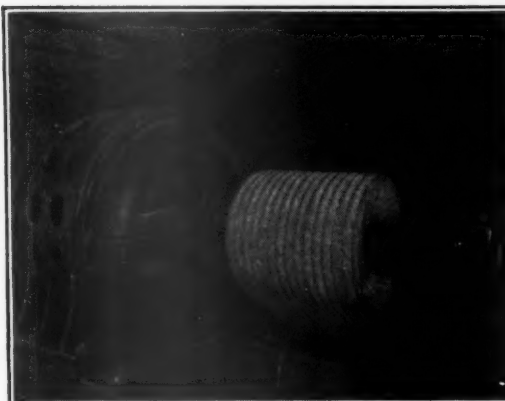
According to reports from Aberdeen, a kraft pulp and paper mill is being planned for Grays Harbor, Washington. The interests contemplating construction are said to be intending to use fir waste from Grays Harbor mills, and already have contracts with a number of sawmills.

Texrope Drive Saving Eleven Horsepower, and Considerable Floor Space, on a Paper Machine Drive



A 500 H. P. Texrope Drive Operating a Machine Grinder. Shaft Centers, 75 Inches

Texrope Drives on Beaters in a Roofing and Insulating Manufacturing Plant. Motor, 250 H. P. All Beaters in This Mill Are Texrope Driven



Progress

ADVANCEMENT of any art depends on the exchange of ideas and dissemination of information. One learns from the experience of others.

Paper mill executives have been very generous in supplying other mills with information concerning the Allis-Chalmers Texrope-Drive, and the phenomenal growth of the drive in pulp and paper mills can be largely attributed to this fact.

Your engineer will undoubtedly specify or recommend Texrope Drives for new or replacement installations. Your neighbor, who has them, will enthusiastically indorse them. The builder of the machines will be glad to see them used, since he knows that the performance of his machines is largely dependent on the way they are driven.

An advancement in the art of driving paper mill machinery has been made. You can easily find out about it through other manufacturers, or by writing us direct.

Allis-Chalmers Manufacturing Co.

Milwaukee, Wisconsin, U. S. A.

TEXROPE DRIVES
are largely used on

BEATERS
PUMPS
FANS
JORDANS
ROD MILLS
SCREENS
WET MACHINES
BARKERS
CALENDARS
WINDERS
PAPER MACHINES
ETC.

ALLIS-CHALMERS TEXROPE DRIVE

(PATENTS PENDING)

Oliver Company Prominent on Coast

The Oliver Continuous Filter Company has at present 30 Olivers operating in paper mills on the Pacific Coast. These machines are built in different designs to meet the varied conditions under which they must work, and as a result there are numerous uses to which they are put.

They are being used as Deckers on ground wood, sulphite pulp, kraft pulp and soda pulp; as Washers on soda and kraft lime mud, soda and kraft stock, de-inked stock; as Re-washers on kraft stock; as Bleach Washers on sulphate stock; as High Density Thickeners on sulphite stock and as Save-alls on white water.

One of the largest paper manufacturing companies in the Northwest, which is using nine Oliver Save-alls in two mills, recently reported that in one mill six Olivers showed a daily recovery of 19,500 lbs. of stock, making a direct saving of \$250. This does not take into account the indirect savings in better products, more uniform operation and better plant conditions. Direct savings in this case paid for the total installation in less than a year.

Oliver representatives visiting mills on the Coast are G. S. Backus, H. A. Vernet, G. L. Wolfin and D. F. Irvin.

January Statistics

According to the News Print Service Bureau, production of news print in Canada during January, 1927, amounted to 161,724 tons and shipments to 158,866 tons. Production in the United States was 135,755 tons and shipments 131,333 tons, making a total United States and Canadian news print production of 297,479 tons and shipments of 290,199 tons. During January, 17,506 tons of news print was made in Newfoundland and 1,112 tons in Mexico, so that the total North American production for the month amounted to 316,097.

The Canadian mills produced 22,036 tons more in January 1927 than in 1926, which was an increase of 16 per cent. The United States output was 4,248 tons or 3 per cent less than in January 1926, that in Newfoundland 3,644 tons or 26 per cent more, and in Mexico 177 tons or 19 per cent more, making a total increase of 21,609 tons or 7 per cent over January, 1926.

During January the Canadian mills operated at 88.9 per cent of rated capacity and the United States mills at 88.6 per cent. Stocks of news print paper at Canadian mills totalled 17,255 tons at the end of January and at United States mills 15,968 tons, making a combined total of 33,223 tons which was equivalent to 2.5 days' average production.

New California Company

The Paper Excelsior and Pad Company, Inc., was recently incorporated in Los Angeles, with a capital of \$50,000. The company, the incorporators of which are Frank McCabe, Evert McCabe and John B. Beman, is represented by Fogel and Beman, Merchants National Bank Building, Los Angeles.

Chicago Engineer Active on Coast

V. D. Simons, prominent Chicago industrial engineer, is on the Pacific Coast visiting the various Zellerbach mills, and making plans for the construction of new plants.

January Rayon Market Sets Record

Reports from some of the leading rayon manufacturers indicate that in the month of January the rayon producing market was the best in more than a year. The Viscose Company's records showed that December sales were the best of 1926 and that January bookings have exceeded those of December.

The Du Pont Rayon Company is reported to have had its best month's sales since its started producing over five years ago.

Calgary Paper Man Visits Coast

John Stanley of the Stanley Paper Company, Calgary, Alberta, was a visitor in Vancouver about the middle of February. His company handles light weight specialties as well as other lines of paper.

Pulp and Paper Ranks Among Leaders

According to the latest Federal census, the paper and wood pulp industries rank among the first ten leading industries in the State of Washington. In this list, the industry at present ranks ninth. It is not unreasonable to believe that the next census will show that the industry has taken a considerable jump toward the top, and will be one of the foremost among the industrial enterprises.

Vancouver Man Now With Stewart and Welch

L. R. Andrews left Vancouver on February 7 to become superintendent for Stewart and Welch, Ltd., at Bloodell, B. C. Mr. Andrews was formerly secretary of the British Columbia Loggers' Association.

Plentiful Hydro-Electric POWER

Abundant, Dependable Current for Pulp & Paper Manufacturing

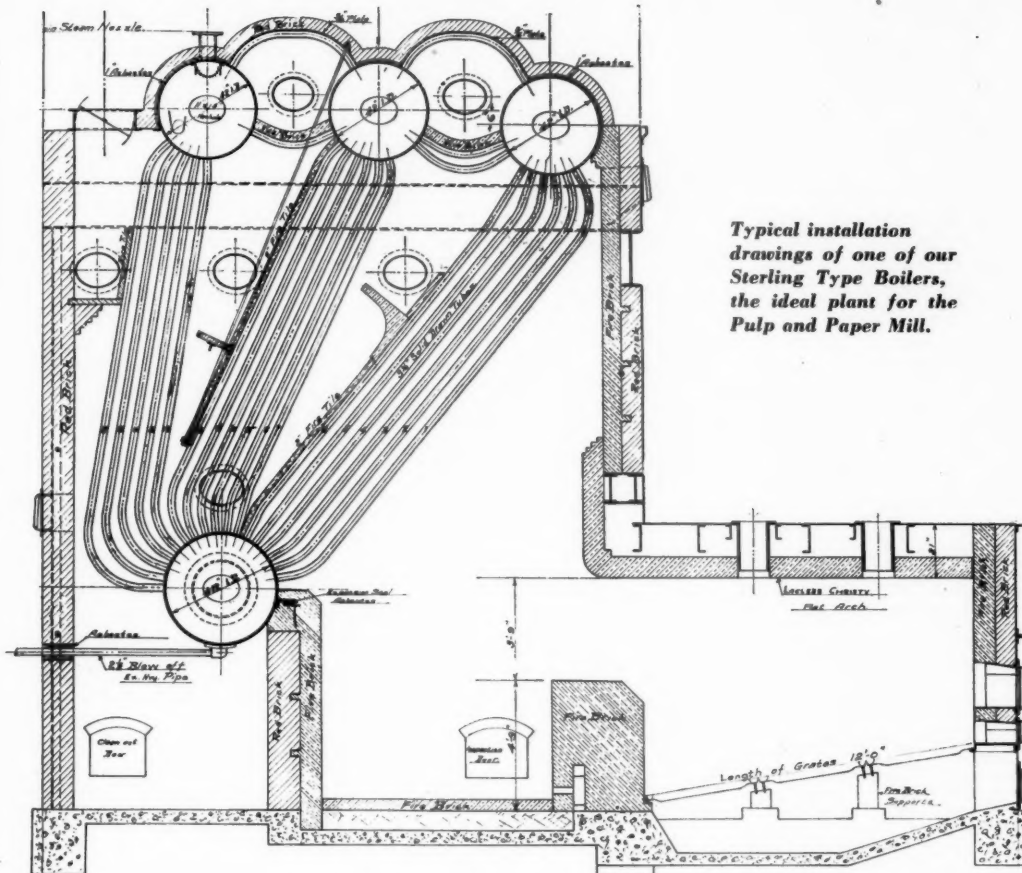
With thirteen hydro-electric and seven steam plants, all interconnected, the Puget Sound Power & Light Company is able to give constant service to the pulp and paper industry in the Puget Sound country. These plants have a total output of 229,890 horsepower.

Pulp and paper manufacturers contemplating establishing mills in Western Washington are invited to confer with our engineers.

Puget Sound Power & Light Co.

Electric Building, Seattle





Typical installation drawings of one of our Sterling Type Boilers, the ideal plant for the Pulp and Paper Mill.

KNOW THE FACTS ON OUR STERLING TYPE BOILER

NO DANGER OF PRIMING

Improved circulation in this boiler has eliminated all danger of priming.

STEAM IS DRY

With the improved circulation you will find dry steam. It is dried thoroughly even after it has given up the larger particles of its water content.

TUBES REMOVED EASILY

Workmen can reach any tube in this Sterling Type Boiler, and remove it very easily.

DEPENDABILITY

Commercial Boilers have long stood the test of dependability. Unnecessary parts have been eliminated; all parts are made by expert craftsmen, who use only the finest materials.

COMMERCIAL BOILER WORKS

Manufacturers of Marine and Stationary, Fire and Water Tube Boilers, Digesters, Diffusers, Tanks, Etc.

**53 to 81 West Lander Street
SEATTLE, U. S. A.**

Norman Gibbs Active at Port Angeles

Norman B. Gibbs, resident manager of the Washington Pulp and Paper Corporation at Port Angeles, is an active figure in the civic and social life of that city, as well as a notable business figure.

Elected president of the Port Angeles Chamber of Commerce last month for his second successive year, Mr. Gibbs has played a notable part in the city's activities. Under his administration the Chamber has de-



NORMAN B. GIBBS
Manager of the Washington Pulp and Paper Corporation

veloped comprehensive plans for broadening out and increasing its usefulness, and has accomplished much of community benefit.

Mr. Gibbs turns in probably the best cards of any member of the Port Angeles Golf Club. His efforts in helping to build a golf course in the city have brought remarkable results, as many visitors to the local course may testify, and have won for him the admiration of all Port Angeles followers of the Scot pastime.

The Colonial style home in which he and Mrs. Gibbs now reside, is one of the most admired residences in the city.

The Washington pulp mill's manager was a student of both the University of Washington and Georgetown University. He was with the A. E. F. in the war. Returning from service he took his present position a few months after leaving the army.

His father, Captain Gibbs, is known to men in shipping circles all along the Pacific Coast.

Tacoma Plant Increases Capacity

The Cascade Paper Company of West Tacoma, Washington, is expanding so that the output will be practically doubled. The machinery has been received at the plant, and the foundations for the new machine are in. The present capacity is about 20 tons, but with the new unit, the daily output will be about 50 tons. F. S. Baker is president of the concern, and Arthur Drips is secretary.

Strawboard Plant Increases Shift

Following his prediction that the Pacific Straw Paper and Board Company would increase its facilities during 1927, Charles F. Schaub has placed the plant on a 24-hour schedule. This change has been made in order that sufficient production could be attained to meet the demand for paper board.

"The increase in orders for the product of our plant, which is somewhat different from any other paper board plant in the country, has caused us to increase our production even earlier than we anticipated. Because of the high quality of board we are making, it is now apparent that we are to have an increased outlet for it in the Orient as well as the domestic trade, and it is quite probable that we will be forced to begin the enlargement of our plant within the next few months." This was the statement made by Mr. Schaub at the time the new schedule went into effect.

The company now employs about 40 men, and the staff will, of course, be considerably increased when the additions to the plant are made. The factory has been in operation for almost a year, but as yet none of the product has been warehoused, as the demand has been brisk, and the board is packed and shipped out as rapidly as produced.

Paraffine Company Sends Man to Wisconsin Pulp School

Thomas Bohne, sulphite superintendent of the Port Angeles, Washington, plant of the Paraffine Companies, Inc., left February 23 for Madison, Wisconsin, to attend the ten-day course in sulphite cooking starting February 28 at the U. S. Forest Products Laboratory.

The class is limited to 15 men, but a second course, covering the same ground, will be given, starting March 21. Of the 15 men enrolled in the first course, eight represent Canadian mills. The enrollment in the second course thus far consists only of American representatives.

There will be sixteen lectures, accompanied by demonstration cooks, paper machine runs and laboratory tests by the students themselves, to illustrate the cooking methods which have resulted in better yields and greater uniformity than usual mill practice.

Mr. Bohne has been at Port Angeles as sulphite superintendent for about five years. He is well versed in sulphite operation, and with the additional knowledge gained at the government laboratory, will no doubt aid materially in his company's efforts to continually improve the products. Following the course, Mr. Bohne will return to Port Angeles by way of California, where he will visit the plants of the Paraffine Companies, Inc., at Entiat, Emeryville and San Francisco, California.

Wood Flume Completed at Shelton

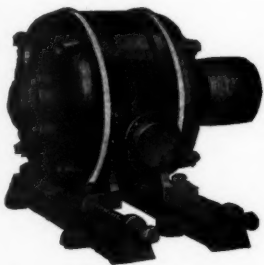
Completion of a 10,600-foot wood stave pipe line thirty inches in diameter from the Goldsborough power dam to the new Rainier Pulp and Paper Company mill at Shelton, Washington, was expected before the first of March, according to late reports received from Shelton.

San Juan Increases Capital

At a meeting of the stockholders of the San Juan Pulp Manufacturing Company early in February, authorization was given to increase the capital stock of the company from \$300,000 to \$400,000.

Pulp and Paper Mill Equipment

CARRIED IN STOCK IN THE NORTHWEST



Howell Red Band Electric Motors with Timken Tapered Bearings

Complete Stocks in the Following Lines—

HOWELL RED BAND ELECTRIC MOTORS WITH TIMKEN BEARINGS.

* *

MEDART TRANSMISSION EQUIPMENT and MACHINERY — Shafting, Bearings, Collars, Hangers, Clutches and Pulleys.

* *

MOLINE CERTIFIED MALLEABLE CHAINS IN ALL SIZES.

* *

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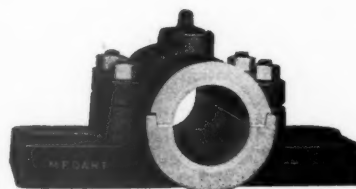


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Pacific Coast Paper Mills Now Operating

Construction of the new factory of the Pacific Paper Mills of Bellingham, Washington, has been completed, all of the paper making machinery installed, and operations have been started. The first day of manufacturing was February 22, when the plant was operated almost up to its present capacity.

The output of the factory is at present approximately ten tons of paper products a day, embracing tissue papers, paper towels, paper napkins and toilet tissues of various brands. Production of the very highest grades of paper is being aimed at, and to this end the factory crew is being carefully selected, and all processes are being closely supervised.

The factory will use sulphite pulp supplied by the San Juan Pulp Manufacturing Company of Bellingham and ground wood from the Occident Pulp and Paper Company, Inc. of Edmonds. About 12 to 15 tons of pulp will be used daily.

For the time being the plant will not generate its own steam, but will be supplied from the surplus at the San Juan Pulp Manufacturing Company. The steam necessary for the present output would not justify the use of the steam plant which has been installed in the Pacific Paper Mills plant. Expansion will take place soon, it is expected, when this equipment will be used. According to J. J. Herb, president of the company, "We have room on our property, which we own, to increase the factory to five times its present capacity, when growth of the business shall warrant."

This factory was built as the result of a preliminary effort to ship paper manufactured in New Westminster, British Columbia, to Bellingham for finishing in the first unit which was completed about two years ago. This method was found unsatisfactory in some respects, so the new plant was built.

The new factory, all of reinforced concrete, with gypsum roof and strictly fireproof thruout, was started last September. It is 240 feet by 45 feet and is two stories in height. The structure and machinery cost approximately \$175,000. All machinery is new and of the most modern type. The first floor contains the water tanks, stock chest, filtering tanks and machine drive, and the balance of the floor is to be used as storage space. On the second floor is located the paper making machine and the towel folding machine.

The first unit of the plant will be used for finishing the products of the new addition. The two buildings are connected by an overhead walk running between the second stories. The finishing plant is 70 feet by 138 feet, two stories high, and cost, with equipment, about \$90,000.

The officers of the company are: J. J. Herb, president; R. F. Arnett, vice president; E. M. Herb, secretary; H. M. Lord, treasurer, and P. J. Herb, superintendent of the mill.

Powell River Starts Railroad Survey

Packers and surveyors have been going into Yakon Lake district by way of the Honna River to make the survey from Yakon Lake to Shannon River for the logging railway that is to be constructed by the Powell River Paper Company to tap its recently acquired timber limits on the Queen Charlotte Islands on the British Columbia coast. The company's operation will mean the employment of many men and it is possible that a new town will be established.

Klamath Falls Mill Seems Likely

Vast quantities of waste material left for the burners of the Klamath lumber mills and large stands of Jack and Lodgepole pine may be utilized, if plans now under way to place a pulp and paper mill in Klamath Falls materialize. The subject has been studied by the Chamber of Commerce, and reported feasible by Henry E. Perkins.

"It is feasible from every standpoint, that waste material and the Lodgepole and Jack pines which are practically useless to Klamath timbermen, be put to some profit," Mr. Perkins states.

This timber would be available for kraft and wrapping papers, or any made by the sulphate process. Such a mill in Klamath would cost at least \$1,000,000, and would have a payroll of about \$50,000.

Further research into this matter is being made by Mr. Perkins and John C. Boyle, director in charge of the industries committee.

New Blake, Moffitt and Towne Building

A reinforced concrete warehouse and store building is being constructed in Sacramento, California, for Blake, Moffitt and Towne. The building is to be two stories and basement, and will have 27,500 square feet of floor area.

All equipment will be of the most modern type, and arranged for the most rapid and efficient manner of handling the stock. Two elevators will be provided, and a loading platform will be placed in the basement where trucks may back into the building. Special scales are to be installed, and electrically-operated tiering machines will be in use. All doors will be fire-proof, and window openings will be closed with metal sashes and wired glass.

Excavation has been completed and foundation work is now going on. It is expected to complete the building in about two months. J. D. Galloway, civil engineer of San Francisco, is in charge of the construction.

A. E. McMaster Making Extended Trip in U. S.

A. E. McMaster, general manager for the Powell River Co., Ltd., is making an extensive trip through the East and South. He went first to attend the convention of the Pulp and Paper Association of Canada at Montreal in January. From Montreal he went to New York and thence on down into the Southwestern part of the United States. His plans were to visit Texas and then California, returning to Vancouver about March 4. The Powell River Co., Ltd., has been shipping a considerable volume of newsprint to consumers in Texas. George F. Steele, of New York, handles the Powell River distribution in the United States.

Prominent Victorians Go East for Paper Interests

Seeking to promote the interests of Vancouver Island, which is wonderfully rich in water power resources and pulp, three prominent men from Victoria, B. C., were recently in Eastern Canada for about a month. The three are Roger Pinneo, head of the Industrial Committee at Victoria; B. C. Nicholas, editor of the Victoria Times; and Mayor J. C. Pendray of Victoria.

The three waited upon the Canadian government at Ottawa to explain the attitude of Victoria on the development of the island.

The party left late in January and expected to return about February 21.

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Astoria Pulp Mill Now Assured

At a special meeting of the city commission of Astoria, Oregon, the concessions requested by the Astoria Box Company as preliminary to the construction of a 50-ton pulp mill in connection with the company's sawmill and box factory were granted, thus assuring early construction of the plant. City land, lying just east of the company's sawmill and recently secured as the result of foreclosure proceedings, was deeded to the company. The interests of the city were protected by a clause requiring that the company reconvey the property if the proposed pulp mill is not in operation within one year.

The commission also remitted the interest and penalty on the delinquent assessments against the property, contingent upon the company paying in cash the \$40,000 delinquent by May 1.

A contract was entered into between the city and the company providing for a supply of 1,000,000 gallons of pure water daily. This is to be paid for at the rate of \$25 per million gallons and two cents per hundred cubic feet in excess of this amount, the company guaranteeing an annual payment of \$7,500. The city engineer was directed to make plans at once to extend the water system so that an adequate supply would be available by November 1, when the pulp mill is to be in operation.

J. L. Hope, attorney for the Astoria Box Company, stated that the contemplated mill would have a daily capacity of 50 tons of sulphite pulp and would employ 50 to 60 men. It will also be necessary to have a double shift in the sawmill in order to supply raw material, thus resulting in the employment of about 500 men over and above the present number with the mill closed down.

It is stated that financing of the project has been completed and that construction will start in the near future.

On February 26 the stockholders met and elected officers and directors. W. P. O'Brien, who has been secretary and manager of the Astoria Box Company, was elected president of the Astoria Box and Paper Company; C. H. Callender, plant superintendent of the same company, was elected first vice-president; William F. McGregor, second vice-president; W. A. Tyler, secretary; James B. Kearney, assistant secretary; James L. Hope, chief counsel; and B. T. McBain, director. These men make up the Board of Directors.

Zellerbach Mills Open Central Office

A new suite of offices to house several activities in the pulp and paper industry was opened at 719 White building, Seattle, on February 1. The Rainier Pulp and Paper Company, the Washington Pulp and Paper Corporation, the Grays Harbor Pulp Company and the International Wood and Sulphite Company will all be represented at the new office.

Mr. K. O. Fosse is general manager of the Seattle office. He has been actively identified with the paper industry for some time. In addition to acting in a managerial capacity for the three first mentioned companies, Mr. Fosse is the owner of the International Wood and Sulphite Company.

Others in the office with Mr. Fosse are Chester Woodford, who is assistant to Mr. Fosse, and William Einzig, purchasing agent for the Washington Pulp and Paper Corporation.

Mr. Leo Burdon of the Shelton plant, was in the Seattle office recently for a few days.

Rayon Pulp Mill to Be Erected in British Columbia

Interests headed by J. J. Herb, president of the Pacific Coast Paper Mills, and of the New Westminster Paper Mills, will soon begin active construction of a 70-ton sulphite mill and a 20-ton ground wood mill on Poplar Island, New Westminster, according to current reports. The plant is to cost \$750,000, and will require at least six or seven months to build. This rayon mill will be the first plant of its kind in the province.

This new company will be known as the Canadian Rayon Pulp Company, and will manufacture chiefly rayon pulp. According to Mr. Herb, it is hoped that the plant will turn out a grade of pulp which will be unequalled. The raw material will consist of waste from the Fraser River sawmills and the box manufacturing plants in that vicinity. Logs will also be used, but will be a minor source of supply.

The Canadian Rayon Pulp Company makes its appearance in the industrial and financial field in the West, sponsored and directed by men of long experience in the British Columbia industry. J. J. Herb of New Westminster, B. C., and Bellingham, Washington, will head the firm as president, and will have direct supervision of the plant management. E. A. Riddell, manager of the New Westminster Trust Company, will be treasurer, and H. L. Edmonds of the law firm of Whiteside, Edmonds and Selkirk, is secretary. Other directors are: N. Loughheed, president of the Abernethy-Loughheed Logging Company, and Charles H. Lain of the Lain Logging Company, Vancouver. Noteholders will name two other directors to complete the board.

The Fidelity Securities Corporation of Vancouver, B. C., are handling the note issue. The securities offered are the direct obligation of the Canadian Rayon Pulp Company, and will be secured by a first mortgage on the plant, equipment, and all assets of the company. Trustee of the company and the noteholders will be the Westminster Trust Company.

Willapa Harbor Timber Options Secured

A. W. Hammond of South Bend, Washington, who has been actively securing options on spruce and hemlock timber stands in Pacific County for the past several months has notified owners that the options will be exercised and initial payments made March 15. Although it is said that these options have been made in behalf of Wisconsin paper interests and that this timber would be utilized by a pulp mill to be built at Raymond or South Bend on Willapa Harbor, it is now generally surmised locally that the interests making these purchases are the Northwest Pulp and Paper Company, who recently announced their plans for the immediate construction of a large mill at Astoria, Oregon, across the Columbia River from Pacific County.

News Print Bureau Official to Visit West

R. S. Kellogg, secretary of the News Print Service Bureau of New York, has announced his intention to make an extensive trip throughout the western pulp and paper industry early next summer.

Thilmany Engineer Now at Longview

C. R. Seaborne, chief paper mill engineer of the Thilmany Pulp & Paper Company of Kaukauna, Wisconsin, arrived in Longview, Washington, recently to take charge of the installation of machinery in the plant at Longview Fibre Company, now under construction there.

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Bankers Approve Proposed Olympia Mill

Unanimous and unqualified endorsement of the proposed pulp and paper mill to be built on Boston Harbor, near Olympia, Washington, was contained in a report made to the Olympia Chamber of Commerce by the presidents of the three Olympia banks, Millard Lemon, C. J. Lord and O. M. Green.

It was stated by the bankers that the project merits the unanimous support of the local citizens, that the site is ideal, and that success seemed assured. The leadership of Lester W. David, a man of long experience in the industry on the Coast, was considered an important point in favor of the enterprise. The report in part said:

"The location of the site under consideration is ideal. It is situated at the virtual center of practically inexhaustible supplies of raw material which can be brought to the plant by water transportation, the cheapest method of carriage.

"The depths of water at the proposed mill dock is amply sufficient to enable the largest of ocean carriers to load at any stage of the tide, being at the same time securely protected from rough weather.

"The distance of this plant from Olympia will be approximately seven miles. With the improvement of existing roads as rapidly and to the extent that the demand justifies, the whole development will be brought within a few minutes of the center of our city.

"The selection of a pulp plant combined with a saw mill for the first installation is peculiarly fortunate, inasmuch as one of our needs in this region today is better utilization of the great stands of hemlock timber. The manufacture of the better portions of these logs into lumber and the conversion of the waste into pulp offers an ideal combination for securing the largest possible returns from the marketing of this timber. Ocean transportation for both the lumber and the pulp can be had direct from the mill to the market on the Atlantic coast.

"Reasoning from the experience of numerous plants operating on this coast, the pulp and paper industry has been, and now is, a very profitable form of investment and should appeal to local people who desire to invest in enterprises which should enable them to earn returns on their money larger than the ordinary dividends or interest rates and at the same time build up our community commercially and industrially."

Paraffine Companies Increase Stock Issue

The Paraffine Companies, Inc., at a meeting in San Francisco recently adopted a resolution to increase the company's capital stock from 60,000 shares preferred stock, par value \$100, and 200,000 shares of common stock with no par value, to 60,000 shares of preferred and 500,000 common.

Should the stockholders approve the resolution at a meeting scheduled for March 15, the directors' intend to split the common and to issue two shares of the new stock for each share now held and thereafter declare a 20 per cent stock dividend.

To maintain, if possible, a dividend rate of \$3 per annum on all of the common stock issued is announced as a further purpose of the company's directors. None of the preferred stock is to be reissued under the resolution adopted.

The regular dividend of \$1.50 per share was declared on the common stock payable March 28 to stockholders on record March 17, 1927.

Southwest Washington Industry to Be Active

Reports from Pacific County, in the southwest part of Washington, indicate an unusual interest being manifested by pulp and paper interests in the large and easily accessible stands of hemlock and spruce in this section. It is further said that Portland pulp and paper interests are considering the establishment of a pulp mill at Raymond, to provide a group of Columbia River mills with a fine grade of pulp.

Other interests have secured an option on a sawmill, with the intention of erecting a pulp mill in connection with it. The sawmill would be operated as a breaking-up plant, saving the clears and better grades of logs for lumber manufacture. Lumber mills in the districts in and around Raymond and South Bend have, it is said, large amounts of small hemlock and spruce logs which they do not find profitable to cut.

It is also rumored that some of the larger lumber mills in this section are considering putting in complete chipping units in their mills to utilize the slabs and cuttings that are now going to the burners. A party of business men are forming a company with the view of establishing a 75-cord chipping plant to furnish chips to nearby pulp and paper mills.

More Conservation

W. E. Gilbert of Portland for the past month has been shipping slabs and other hemlock and spruce mill cuttings secured from the large sawmills at Raymond and South Bend, Washington, to the paper mill at Oregon City and others on the Columbia River. This movement has developed into several cars per day and it is a direct recovery to the sawmill operators, as this material has in the past gone into the mill burners. Mr. Gilbert is also working up large accumulations of low grade boards and other mill waste into pulp wood lengths, thus clearing out many of the mill yards.

D. B. Davies Coming West

Another executive of the Fox River Valley of Wisconsin has recently resigned to come to the western industry. D. B. Davies, for the last three years superintendent of the Hoberg Paper and Fibre Company of Green Bay, Wisconsin, is leaving March 1 for Shelton, Washington, where he will take charge of the plant of the Rainier Pulp and Paper Company. He is to be superintendent of this plant, and it is said that he will later take charge of the mill of the Zellerbach Company which is to be built about 40 miles from Shelton on Grays Harbor. Prior to his connection with the Hoberg Paper and Fibre Company, Mr. Davies was assistant mill manager for the Northern Paper Mills at Green Bay.

Los Angeles Paper Company Incorporated

A recent California incorporation was that of the Los Angeles Paper Stock Company. The incorporators of the company are J. T. Blalock and F. McDewitt. The papers of incorporation showed the capital to be \$20,000. The representative of the firm is Frank M. Wilcox, 841 Citizens National Bank Building, Los Angeles.

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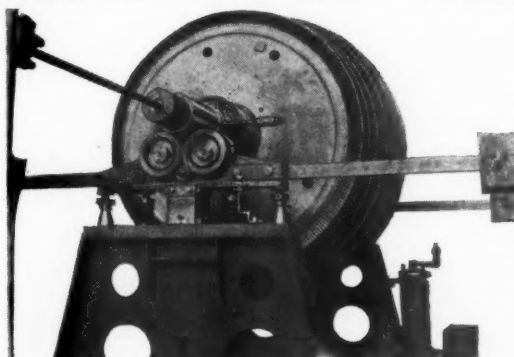
Your attention is called to our installation for the San Juan Pulp Co. as mentioned in the
descriptive article in this issue of Pacific Pulp and Paper Industry.

Announcement—We wish to announce to the rapidly developing pulp and paper industry that we are exclusive operators of "Akimoff" balancing machines for the Pacific Coast region. We have the only set of machines of this type which correct for static and dynamic balance in private operation on the Pacific Coast. We therefore respectfully solicit inquiries on any problem involving

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Canadian Pulpwood Royalty May Be Raised

British Columbia pulp manufacturers are viewing with some concern the proposal of government officials to increase the royalty on pulp timber from 25 cents to 40 cents per cord. This matter will be taken up before the present sitting of the legislature, and will be finally settled in a short time, it is thought.

Ossian Anderson Visiting California

Shortly after March 1, Ossian Anderson, president of the San Juan Pulp Manufacturing Company, left for Los Angeles, California, where he plans to remain for some time. It is understood that Mr. Anderson will forget business for a while and take a vacation.

P. S. Bonney, woods manager for the Pacific Mills, Ltd., was in the company's offices at Vancouver recently, but left for the scene of operations on February 14.

New Pulp Timber Company

The Pacific Pulp Timber Company of South Bend, Washington, was incorporated March 2, with a capital stock of \$75,000. The incorporators were S. E. Earle and A. W. Hammond.

Menasha Representative Visits Northwest

Joe Williams, Pacific Coast representative of the Menasha Printing and Carton Company of Menasha, Wisconsin, arrived in Seattle the latter part of February, visiting the firms in this territory.

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